amateur radio

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

VOL. 48, No. 4 JUNE 1980

FEATURED IN THIS ISSUE:

- ★ A SPECTRUM SCANNER
- ★ A DECADE ON VHF
- ★ AMATEUR SATELLITES — PHASE III
- ★ THE STATIC ELECTRICITY SYNDROME
- ★ VK/ZL/OCEANIA DX CONTEST 1979, FOREIGN RESULTS

Registered for posting as a Publication — Category "B".

VICOM ..... the one-stop communications shop! Offering ICOM, KENWOOD & YAESU.

Base or Mobile - we've got the largest range of ham gear to get you on the air and keep you there! All our sales are supported by technical back-up that's unequalled in the industry. Count on VICOM for personalised service every step of the way.
Give us a call today!

CALL US FOR A GOOD DEAL ON KENWOOD PRICES!

BALUNS

AS-BL Asahi 50 ohms for beams - $34.00
BL50A 50 ohm 4Kw 1:1 for dipoles - $32.00
BL70A 70 ohm 4Kw 1:1 for dipoles - $32.00

HY-GAIN ANTENNAS

204BA 4el monobander for 20m -$259.00
203BA 3el beam 20m - $199.00

JAYBEAM ANTENNAS

5Y/2m 5el, 2m 7.8 dBd gain, length 1.6m-$43.00
8Y/2m 8el,3m 9.5 dBd gain, length 3.8m-$51.00
D8/70cm Twin 8el, 70 cm. 12.3 dBd, 1.1m-$64.00
PBM 18/70 18el, 70cm, 14.9 dBd, 2.8 - $96.00
MBM 48/70 48 el, 70cm, 15.7 dBd, 1.83m - $83.00
MBM 88/70 88el, 70cm, 18.5 dBd, 3.98m - $105.00
PMH/2C Phasing harness - $20.00
8XY/2m 2m cross yagi, 8el, 9.5 dBd, 2.8m - $99.00
12XY/70cm 70cm cross yagi, 12el, 13.0 dBd, 2.6m - $139

NAGARA

V4JR 40-10m trap vertical, 5.2m high - $99.00

SWR/PWR METERS AND DUMMY LOADS

VC-2 Twin meters 3-15MHz with cal. chart - $35
SW110A Daiwa 1.8 thru 150MHz - $79.00
SW210A Daiwa 1.8 thru 150MHz 20/120W direct $99
CN620 Daiwa Cross-needle, 1.8-150MHz direct $99
CN630 Daiwa $140-450MHz, 20/200W direct read $135.00
CN650 Daiwa, 1.2-2.5GHz, 2/20W, direct read $169
LPM-885 Leader SWR/PWR meter - $89.00
LPM-880 RF Power meter - $135.00

BEARCAT SCANNERS (PROGRAMMABLE)

BEARCAT 210F VHF/UHF, 10chs, ac/dc - $412.00
BEARCAT 220FB 20chs incl. aircraft AM - $556.00
BEARCAT 250FB VHF/UHF, 50chs, ac/dc with 68-88 MHz - $556.00

LOOK AT THESE BARGAINS!

VMI noise cancelling mics $10
2M ¼ wave whips $7
2M ⅝ whips, only $14
HF385 Preamp VHF/UHF $30
HF395 Preamp to 225MHz $6
HF65 FM Tx Kit $9
2M Ringos $55 BACK AGAIN!

ANTENNA COUPLERS

CL67A Daiwa 1.9 - 28MHz 500w pep - $135.00
CNW217 Daiwa incl. SWR/PWR meter, 200W - $165
MFJ901 MFJ. Matches everything 1.8-30HMz - $119
MFJ16010 MFJ. Random wire tuner $160-10M - $71
LAC-895 Leader 3.5 thru 28MHz - $169.00
CNA-1001 Daiwa, automatic 200W - $269.00
CNA-2002 Daiwa, automatic, 2.5KW - $569.00

AIRCRAFT RECEIVERS

747 16ch, ac/dc scanning, inc. 4xtals - $199.00 Qty.10-20
XTALS Additional crystals - $7.50

ICOM GEAR

IC551 6m tansceiver, all mode $859
IC551D 6m transceiver, all mode, 100W $849
ICPS20 Power supply $230
ICSP2 Matching spaker $56
IC402 70cm SSB portable, 3W $439
IC202S 2M SSB portable 3W $318

LOW PASS FILTERS (DAIWA)

FD30LS 32MHz, Fc, 200W, 3 stages Qty. 1-10-$20

HELICAL WHIPS

VAH/80 80m helical $28
VAH/40 40m helical $28
VAH/20 20m helical $28
VAH/15 15m helical $28
VAH/10 10m helical $28

MAST HEAD DIVIDER

AD103X Mast-head splitter 70cm/2m/Hf - $59.00

RF MATCHING TRANSFORMERS

PALOMAR 500W, switchable 6 impedances - $96.00

MORSE KEYS

HK702 Deluxe Key with marble base $41
HK708 Economy Key $23
HK706 Operator's Key $22
MK701 Manipulator (side-swiper) $45

TUBES

6KD6 Finals for Yaesu linears $10
6JS6C Yaesu finals $10
6146B Kenwood, Uniden, Yaesu finals $13

LEADER TEST EQUIPMENT

LDM-815 Dip meter 1.5 -250MHz $89
LPM-885 SWR/Watt meter 1W - 100W $97
LAC-895 Antenna Coupler $182
LBO-310H Ham Oscilloscope $330
LA-31 Ham scope adapter $26
LHM-80A High voltage probe $32
LSG-16 RF Signal Generator $129
LAG-26 AF Signal Generator $159

VICOM

SYDNEY: 339 Pacific Hwy, Crows Nest
Ph. 436 2766

MELBOURNE: 68 Eastern Rd., Sth. Melb.
Ph. 699 6700 Tlx. 36935

DEALER ENQUIRIES INVITED

Published monthly as its official journal by the Wireless Institute of Australia, founded 1910.

amateur radio

JUNE 1980
VOL. 48, No. 6

PRICE: $1.20

Registered Office:
3/105 Hawthorn Road,
Caulfield North 3161.

EDITOR:
BRUCE BATHOLS* VK3UV

PRODUCTION MANAGER:
MARK STEPHENSON* VK3NOY

TECHNICAL EDITORS:
BILL RICE* VK3ABP
EVAN JARMAN* VK3ANI
RON COOK* VK3AFW
GIL SONES* VK3AUI

CONTRIBUTING EDITORS:
BOB ARNOLD VK3ZBB
MIKE BAZLEY VK6HD
ROY HARTKOPF* VK3AOH
RON FISHER* VK3OM
ERIC JAMIESON VK5LP
LEN POYNTER* VK3BYE
BILL VERRALL VK5WV
WALLY WATKINS VK2DEW

DRAFTING:
NEIL OSBORNE* VK3YEI

BUSINESS MANAGER:
PETER DODD VK3CIF

***Member of Publications Committee**

Enquiries and material to:
The Editor,
PO Box 150, Toorak, Vic. 3142

Copy is required by the **first of each month.** Acknowledgement may not be made unless specially requested. All important items should be sent by certified mail. The editor reserves the right to edit all material, including Letters to the Editor and Hamads, and reserves the right to refuse acceptance of any material, without specifying a reason. Material should be sent direct to **P.O. Box 150, Toorak, Vic., 3142,** by the **25th of the second month preceding publication. Phone: (03) 528 5962.** Hamads should be sent direct to the same address by the **1st of the month preceding publication.**

Trade Practices Act: It is impossible for us to ensure that advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore advertisers and advertising agents will appreciate the absolute need for themselves to ensure that the provisions of the Act are complied with strictly. Readers are reminded that, when buying, obtaining or receiving goods from overseas including goods listed in advertisements by overseas organisations in this Journal, Customs import duties and Sales Tax may be levied on the goods at the time of importation. These amounts, if any, are payable by the purchaser unless the terms of sale state otherwise and the seller has made specific provision to this effect in his quotation to the buyer or unless other prior arrangements are in force between the buyer and the seller.

Typesetting: MUELLER INDUSTRIES
1a Levanswell Road, Moorabbin, 3189
Tel.: 553 0292

Printers: EQUITY PRESS PTY. LTD.
50-52 Islington Street, Collingwood, 3066
Tel.: 41 5054, 41 5055

CONTENTS

TECHNICAL

A Spectrum Scanner 11
More on the DJ4LB ATV Transmitter as a Basis for a 70 cm SSB Transverter 26
Try This with the Technical Editors — Simple Elliptically Polarised Antenna 31

GENERAL

A Decade on VHF 12
Putting up a TH3JR 22
Quo Vadis? 35
Technical Correspondence 35
The Static Electricity Syndrome 21
The WIA in VK2 20
VK CW QRP 29
VK/ZL/Oceania DX Contest 1979 Foreign Results 34

DEPARTMENTS

Amateur Satellites 23, 31
Around the Trade 40
Awards Column 29
Contests 36
Divisional Notes 33
Hamads 42
Intruder Watch 36
Ionospheric Predictions 37
Letters to the Editor 39
Magpubs 40
Main QSP 5
Obituary 41
QSP 31, 36, 39
Silent Keys 41
VHF-UHF — an Expanding World 32
WIANEWS 5
WICEN 38
You and DX 37

ADVERTISERS' INDEX 41

Cover Photo

Our cover this month shows Eric Jamieson VK5LP, The Voice in the Hills. Eric was licensed in 1961 as VK5ZEJ, then in 1968 became VK5LP. He is operational on all bands 160 metres to 70 cm, but his greatest interest centres on VHF/UHF. Eric works as a TV service technician and has been interested in electronics from the age of 10. His other hobbies include photography, audio visuals, coin and stamp collecting, vintage wireless collecting, radio valves and collecting items of historical interest. Perhaps the greatest interest is keeping ahead of Dave VK5CK for the number of VK3s worked on 2 metres!

(See Page 12 for "A Decade on VHF")

GOOD GEAR FROM TONO!

THETA 7000E COMMUNICATIONS COMPUTER

- ☐ Just connect to any TV set
- ☐ Provides send/receive for CW, RTTY and ACSII.
- ☐ Stacks of features
- ☐ Receive commercial CW and RTTY news bulletins

STILL ONLY **$899** cat 7000E

TONO

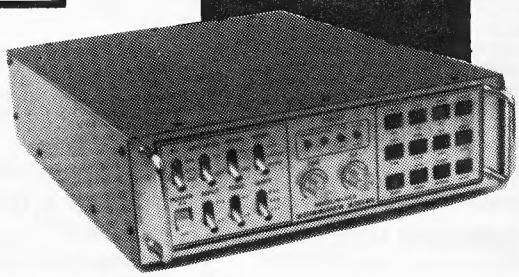
NEW!

HC800 DOT MATRIX PRINTER

- ☐ 125 cps, 9 x 7 dots
- ☐ Bidirectional
- ☐ Interfaces with 7000E or Theta 350

PRICE $999 cat. HC800

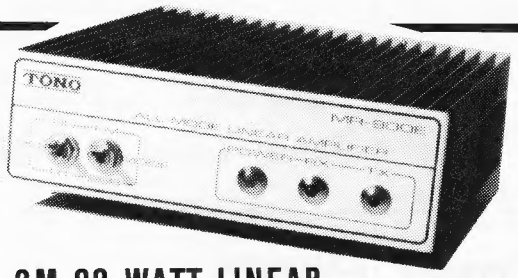
NEW!



THETA 350 RECEIVE ONLY TERMINAL

- ☐ RTTY, CW and ASCII
- ☐ Video ouput for connection to TV set

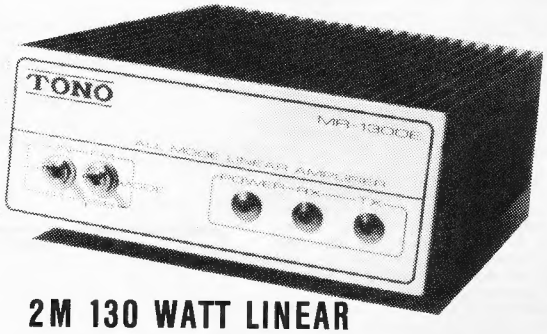
$599 introductory price



2M 90 WATT LINEAR MODEL MR900E

- ☐ FM/SSB/CW/RTTY
- ☐ Inbuilt 13dB receiver preamp
- ☐ Output 80-90W, input 10-15W
- ☐ Current 7-8A

PRICE $289



2M 130 WATT LINEAR MODEL MR1300E

- ☐ FM/SSB/CW/RTTY
- ☐ Inbuilt 13dB receiver preamp
- ☐ Output 120-130W, input 10-15W
- ☐ Current 10-11A

PRICE $350

VICOM

SYDNEY: 339 Pacific Hwy, Crows Nest Ph. 436 2766
MELBOURNE: 68 Eastern Rd., Sth. Melbourne Ph. 699 6700

AVAILABLE AT MOST GOOD HAM STORES

QSP — INTO THE EIGHTIES (AND BEYOND)

GREETINGS

It was once said that a camel was really a horse designed by a committee.

The "highest" committee of the Wireless Institute, the Federal Council, recently held its annual meeting (the Federal Convention) in Melbourne.

At these meetings, reports by the various officers are tabled, procedural items are dealt with and policies are determined. Members of the 44th Council this year also gave consideration to the future of our leisure activity: Not so much the immediate future — but beyond.

- **What form will our hobby take at the end of this decade?**
- **Will developments in technology affect the average amateur? If so, in what way?**
- **What about our nearby neighbours in this Region, in particular those who at this stage see little or no value in Amateur Radio for personal communications?**
- **How is this attitude likely to affect us? Our new bands — how best to use them?**
- **"Future shock" — is this already affecting some areas of our hobby? If so, can we overcome it with special upgrading of technical services and facilities?**
- **How can we best prepare for the possibility of future major radio conferences before the year 2000?**
- **Should we be gearing up further to help the large influx of novices to gain this limited or full licence?**

Crystal Ball gazing is a difficult and often dangerous occupation, but without some form of long-term plan, we may well find ourselves in difficulties: And when I say "we" I mean all Australian amateurs.

Twenty or so people gathered around a table once a year cannot answer these types of questions without help — if they do attempt it, the result is likely to be a slightly distorted "horse"!

What is required is YOUR personal contact with people who can in turn pass on YOUR views to the Federal Council via Club or Divisional meetings. Please request that they be passed on to your State's Federal Councillor. His name is printed elsewhere in this journal.

The future of our hobby requires a solid foundation. How about you helping to lay a stone or two?

P. A. WOLFENDEN VK3ZPA
Federal President ■

WIANEWS

This is in the nature of a "STOP PRESS" report on the 1980 Federal Convention held in Melbourne over the Anzac holiday weekend, 25th-27th April. After seven years in office as Federal President, David Wardlaw VK3ADW, announced his retirement from the Executive and Peter Wolfenden VK3ZPA was elected in his stead. David will not be severing his connections with Executive, however, because of now being Immediate Past President. Both he and Michael Owen VK3KI will both continue their IARU and ITU/WARC involvements for the amateur service and the WIA as joint IARU Region 3 liaison officers.

A very pleasant ceremony during the Convention was the presentation of suitable gifts to both David and Michael and their families, in appreciation of their work for the amateur service and the WIA. The recognition of the roles of both Mrs. Wardlaw and Mrs. Owen in support of their respective husbands during several years of amateur radio involvement was much appreciated by them. The surprise element of the presentation took the amateur recipients aback when the Convention business was "rudely" interrupted by Alex McDonald VK4TE, suddenly, on a signal, taking charge of proceedings and making the presentation. A secret well kept by both the wives and the Divisional Councillors.

Visitors at the Convention included Gerry Kilpatrick ZL1BBS, a Councillor of NZART, Bob Arnold VK3ZBB, Alf Chandler VK3LC and Graeme Fuller VK3NXI, his successor, Wally Watkins VK2DEW and Neville Wilde VK2DR, Roy Hartkopf VK3AOH, who has taken over from Graeme Scott VK3ZR as Federal Education Co-ordinator on the latter standing down for business reasons, and, naturally, Bruce Bathols VK3UV, Managing Editor of AR, supported by Ron Cook VK3AFW from the Publications Committee.

A more detailed report of the Convention is scheduled to appear in July AR but a few items may be of general interest at this stage. Both Michael Owen and David Wardlaw gave further reports on the background at WARC 79 and the 17 State delegates heard a brief description of New Zealand amateur activities well presented by ZL1BBS. Each of the other visitors listed above presented and answered questions on their annual reports.

It was noted that ITU/WARC must be an ongoing task because several specialised ITU conferences (e.g. Space) scheduled for this decade quite apart from work connected with the Australian frequency table as a corollary of WARC 79.

The Convention noted with pleasure recognition of the tremendous amount of WIA work done by the late Keith Roget VK3YQ, by the Victorian Council re-activating the Victorian Award started by him, and close to his heart, under the new name of the Keith Roget National Parks Award.

WHY ICOM HAS THE 2 METRE MARKET SEWN - UP . . . . . .

6 Great Rigs of the highest quality!

"THE FAMOUS IC22S"

Over 3000 of these popular fm mobile rigs in use in Australia. Uses a programmable divide matrix giving 22 channels. Comes complete with mic, mobile mounting bracket, dc leads and VICOM 90 day warranty. LIST PRICE $299.

"IC260A SSB/FM/CW MOBILE"

This new mobile all-mode rig covers 144-148 MHz. Features uP control, multi-purpose scanning twin VFO's, efficient noise blanker, CW break-in and many other circuits for your convenience. The IC260A runs 10 watts and offers outstanding performance. Your new IC260A comes complete with mic, manual, mobile mounting brackets and 90 day warranty. LIST PRICE $599.

"IC251A all-mode base station/mobile"

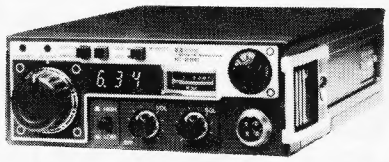
The popular ac/dc Microprocessor-controlled rig incorporating multi-purpose scanning, dual VFO's light weight and featuring the ICOM outstanding performance. The optical chopper tuning system means no backlash and problem free use as there is no dial gear or variable capacitors. Drop in and see a new IC251A at your VICOM dealer today! LIST PRICE $847.

"IC2A mini hand-held"

ICOM'S newest fm rig, about the size of a $2 note! 1.5 watts output using unique slip on/off and selectable size nicad packs. Offers 800 channels 144-148 MHz. The cheapest fm hand-held around. ONLY $279.

"IC255A 25w FM MOBILE"

The uP controlled fm mobile runs 25 watts output which means greater QSO range. The receiver uses the newly developed low-noise and large dynamic range junction FET's (for the RF amplifier and first mixer) and helical cavity filters providing excellent sensitivity and intermod distortion characteristics. Your new IC255A comes complete with VICOM'S 90 day warranty. OUR PRICE $425.



"IC280 Remotable mobile"

The IC280 squeezes optimum performance into the tightest spaces. Using a detachable front section, the diminutive IC280 is designed to fit the most cramped modern vehicle. Small size means big performance with ICOM - your new IC280 remotable comes complete with mic, mobile bracket and comprehensive instruction manual. STILL ONLY $450!

ICOM PERFORMANCE: NOBODY DOES IT BETTER!

VICOM

Distributed in Australia by VICOM

In-depth discussions took place on the future of your magazine AR, on the Amateur Advisory Committee system, on press publicity, recruitment of new members and the role of the WIA, as well as several technical and administrative subjects. The inclusion of Divisional bulletin material in the printed page of AR was thoroughly aired and generally favoured on the grounds of interest by readers in other States and problems connected with inserts into the magazine. Improving and updating the presentation of AR were considered essential. In 1981 the WIA Call Book could be mailed to members subject to a closer examination during the next month or two of all that this involves.

The areas of education, examinations and licensing received detailed attention, especially the most effective way of utilising the $3,500 which accrued in 1978 from the Dick Smith sale of equipment. As it was now evident that the production of professional-style educational videocassettes was outside the amount of money available and in the light of delays which had already occurred, it was agreed that this money be apportioned equally among the Divisions for local education/promotion type projects which must be properly itemised and reported by the end of October.

Amateurs who go overseas will be aware of the popularity of the "international diamond" style of membership badge which readily identifies the amateur radio enthusiast. It was decided to adopt the style of badge as an alternative, but it was strongly emphasised that the existing badge must continue.

Much thought was given to the problems arising from the use of TV Channels 0 and 5A and the compensation deemed thus far inadequate for the loss of the 11 metre band. These were seen as political issues of considerable sensitivity requiring caution in the methods believed desirable if any lobby is to be mounted. Ths is particularly the case to avoid undesirable, and undesired, repercussions.

A motion to request the P. and T. Department to grant a small downward extension of the 80 metre band Novice segment generated considerable debate and finally ended up with an equality of voting for and against, with one Division unable to make an immediate decision. The question of gentleman's agreements on the use of modes within the HF bands came into these debates, particularly on the basis that if amateurs ignore them (remembering that CW as a mode may be used throughout all the HF bands) it would be unthinkable to ask for them to be apportioned by regulation as occurs in the USA, which is a very special case. Adherance to WIA band plans was also strongly supported.

A small working group was set up for the future planning of amateur radio in Australia; Ron Henderson VK1RH and Dave Laurie VK4DT are the Co-ordinators of the shorter term planning for the three new, small, HF bands. In the latter case it was clear that world-wide co-ordination through the IARU was essential. A vote was carried unanimously re-affirming the Institute's commitment to the IARU and the IARU R3 Association. This naturally includes sister Societies, particularly NZART.

As in all Conventions over the past few years a budget for next year was adopted subject to review at the end of August. An increase of the Federal dues by $1.00 was decided.

The Executive wishes to acknowledge with grateful thanks the receipt of further donations received from members towards WARC 79 expenses (but it is believed the final listing is still incomplete) —

Blue Mts. ARC per VK2YGE $10.00
VK4NLX .... 1.50 ■

WIRELESS INSTITUTE OF AUSTRALIA

Federal President: Mr. P. A. Wolfenden VK3ZPA
Federal Council:
VK1 Mr. R. G. Henderson VK1RH
VK2 Mr. T. I. Mills VK2ZTM
VK3 Mr. G. A. G. Williams VK3ZXW
VK4 Mr. A. R. F. McDonald VK4TE
VK5 Mr. C. J. Hurst VK5HI
VK6 Mr. N. R. Penfold VK6NE
VK7 Mr. B. J. Morgan VK7RR
Staff: Mr. P. B. Dodd VK3CIF, Secretary.
Part-time: Col. C. W. Perry, Mrs. J. M. Seddon and Mr. Mark Stephenson (AR Production).
Executive Office: 3/105 Hawthorn Rd., Caulfield North, Vic. 3161. Ph. (03) 528 5962.
Divisional Information (all broadcasts are on Sundays unless otherwise stated).

ACT:
President — Mr. A. Davis VK1DA
Secretary — Mr. F. Robertson-Mudie VK1NAV/ZZZ
Broadcasts— 3570 kHz and 2m Ch. 6 (or 7): 10.00Z.

NSW:
President — Mr. F. S. Parker VK2NFF
Secretary — Mr. T. I. Mills VK2ZTM
Broadcasts— 1825, 3595, 7146 kHz, 28.32, 52.1, 52.525, 144.1, 145.6, 146.4, Rptr. Ch. 3 — Gosford, Ch. 4 — Lismore, Ch. 5 Wollongong, Ch. 8 — Dural 11.00h local (Evening 0930Z). Relays on 160, 80 and 10m, VHF and Reptr. Ch. 3, Ch. 5, Ch. 8, and Hunter Branch, Mondays 0930Z on 3595 kHz, 10m, and Ch. 3 and 6. RTTY Sunday 0030Z 7045, 14090 kHz, Ch. 52, 0930Z 3545 kHz, Ch. 52.

VIC.:
President — Mr. E. J. Buggee VK3ZZN
Secretary — Mr. G. F. Atkinson VK3YFA
Broadcasts— 1840, 3600, 7135 kHz — 53.032 AM, 144.2 USB and 2m Ch. 2 (5) repeater: 10.30 local time.
Gen. Mtg. — 2nd Wed., 20.00.

QLD.:
President — Mr. A. J. Aarsse VK4QA
Secretary — Mr. W. L. Gielis VK4ABG
Broadcasts— 1825, 3580, 7146, 14342, 21175, 28400, kHz; 2m (Ch. 42, 48): 09.00 EST.
Gen. Mtg. — 3rd Friday.

SA:
President — Mr. I. J. Hunt VK5QX
Secretary — Mr. W. M. Wardrop VK5AWM
Broadcasts— 1820, 3550, 7095, 14175 kHz; 28.5 and 53.1 MHz, 2m (Ch. 8): 09.00 S.A.T.
Gen. Mtg. — 4th Tuesday, 19.30.

WA:
President — Mr. Ross Greenaway VK6DA.
Secretary — Mr. Peter Savage VK6NCP.
Broadcasts— 3560, 7075, 14100, 14175 kHz. 28.47, 53.1 MHz. 2 metres Ch. 2 Perth, Ch. 6 Wagin. Time 0130Z.
Gen. Mtg. — 3rd Tuesday.

TAS.:
President — Mr. R. Emmett VK7KK
Secretary — Mr. B. J. Morgan VK7RR
Broadcasts— 7130 (SSB) kHz with relays on 6 and 2m Ch. 2 (S), Ch. 8 (N), Ch. 3 (NW), 09.30 EST.

NT:
President — Mr. T. A. Hine VK8NTA
Vice-Pres. — Barry Burns VK8DI
Secretary — Robert Milliken VK8NRM
Broadcasts— Relay of VK5WI on 3.555 MHz and on 146.5 MHz at 2330Z. Slow morse transmission by VK8HA on 3.555 MHz at 1000Z almost every day.

Postal Information:
VK1 — P.O. Box 46, Canberra, 2600.
VK2 — 14 Atchison St., Crows Nest, 2065 (Ph. (02) 43 5795 Tues & Thurs (10.00-14.00h). P.O. Box 123, St. Leonards, NSW 2065.
VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03) 41 3535 Weekdays 10.00-15.00h).
VK4 — G.P.O. Box 638, Brisbane, 4001.
VK5 — G.P.O. Box 1234, Adelaide, 5001 — HQ at West Thebarton Rd., Thebarton.
VK6 — G.P.O. Box N1002, Perth, 6001.
VK7 — P.O. Box 1010, Launceston, 7250.
VK8 — (Incl. with VK5), Darwin AR Club, P.O. Box 37317, Winnellie, N.T., 5789.

Slow morse transmissions — most week-day evenings about 09.30Z onwards around 3550 kHz.

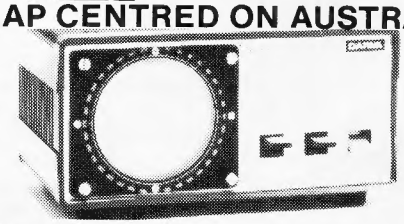
VK QSL BUREAUX

The following is the official list of VK QSL Bureaux, all are inwards and outwards unless otherwise stated.

VK1 — QSL Officer, G.P.O. Box 46, Canberra, A.C.T. 2600.
VK2 — QSL Bureau, C/- Hunter Branch, P.O. Teralba, N.S.W. 2284.
VK3 — Inwards QSL Bureau, Mr. E. Trebilcock, 340 Gillies Street, Thornbury, Vic. 3071.
VK3 — Outwards QSL Bureau, Mr. R. R. Prowse, 83 Brewer Road, Bentleigh, Vic. 3204.
VK4 — QSL Officer, G.P.O. Box 638, Brisbane, Qld., 4001.
VK5 — QSL Bureau, Mr. Ray Dobson VK5DI, 16 Howden Road, Fulham, S.A. 5024.
VK6 — QSL Bureau, Mr. J. Rumble VK6RU, G.P.O. Box F319, Perth, W.A. 6001.
VK7 — QSL Bureau, G.P.O. Box 371D, Hobart, Tas. 7001.
VK8 — QSL Bureau, C/- VK8HA, P.O. Box 1418, Darwin, N.T. 5794.
VK9, 0 — Federal QSL Bureau, Mr. N. R. Penfold VK6NE, 388 Huntriss Rd., Woodlands, W.A. 6018.

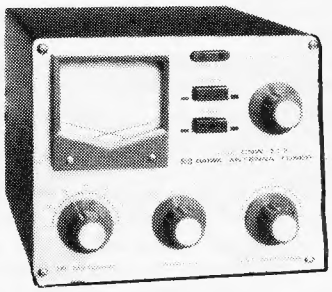
"MORE GREAT DAIWA GEAR TO TURN YOU ON!"

ROTATORS NEW TYPE WITH MAP CENTRED ON AUSTRALIA!



DR7500R	Medium Duty	189.00
DR7500X	Medium Duty with pre-set controller	172.00
DR7600R	Heavy Duty	269.00
DR7600X	Heavy Duty with pre-set controller	239.00

DAIWA



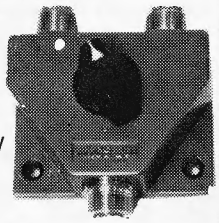
ANTENNA COUPLERS

CL67A	1.9-28 MHz, 500 wpep	135.00
CNW217	incl SWR/PWR Meter, 200W	165.00
CNW418	as above, with new WARC freqs	179.00

High quality models with SWR/PWR Meter include unique cross-needle meter.

COAXIAL SWITCHES

2 Position model CS201 23.00
4 Position model CS401 59.00



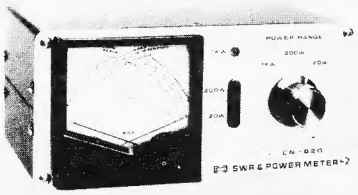
Professionally engineered cavity construction, high isolation.

Power rating: 2.5 KW pep, 1 KW CW
Impedance: 50 ohm
Insertion loss: less than 2dB
Maximum frequency: 500 MHz
Isolation: Better than 60dB at 300MHz.

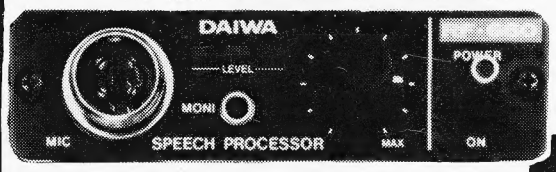
SWR & POWER METERS

Model	Freq.	PWR	Cross-Needle	Price
CN620	1.8-150 MHz	20/200/1KW	yes	99.00
CN630	140-450 MHz	20/200	yes	135.00
CN650	1.2-2.5 GHz	2/20	yes	169.00
SW210A	1.8-150 MHz	20/120	no	99.00

Cross-needle type offer DIRECT readings.



SPEECH PROCESSORS



RF660	Phasing type dc	109.00
RF440	Phasing type ac/dc	126.00
RF550	Fitter type, ac/dc	169.00
MC330	Speech compressor	99.00

Increase talk power with splatter free operation. RF clipping (not in MC330) assures low distortion. Simply install between microphone and transmitter.

Typical specs RF660:
Talk power: Better than 6dB
Freq. Response: 200Hz-3000Hz at 12dB down
Distortion: less than 3% at 1 KHz, 20dB clipping.
Power Req.: 13.8 Vdc at 50mA.

AUTOMATIC ANTENNA TUNER

New model with the extra WARC frequencies included. The VSWR is automatically adjusted below 1.5 PWR Rating 500W pep.

CNA1001 269.00

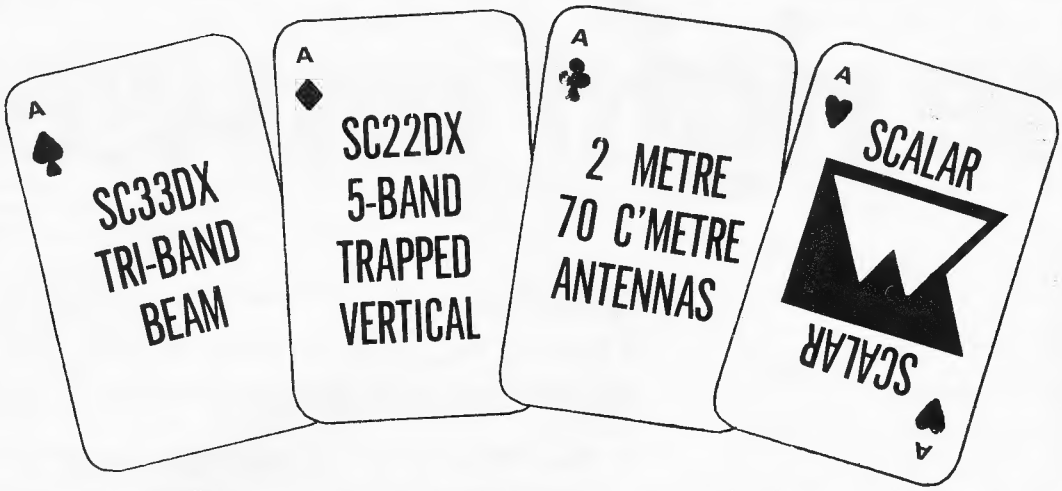
VICOM

SYDNEY: 339 Pacific Hwy, Crows Nest
Ph. 436 2766

MELBOURNE: 68 Eastern Rd, Sth Melb.
Ph. 699 6700

AVAILABLE AT REPUTABLE HAM DEALERS

OUR CARDS ARE ON THE TABLE!



Comments at field days indicate that you don't really know what we've got!
So now we'll **SHOW YOU OUR HAND** - and where to **GET THE BEST DEAL!!**

PRODUCT LIST AND RECOMMENDED RETAIL PRICES

70 cm BAND

SCA40T dB Fibreglass Whip	**$13.10**
OB UHF Mobile Antenna Base	**$5.20**
C54/OB Guttergrip with OB Base	**$19.00**
C60/OB Trunkmount with OB Base	**$8.65**
GSA46 6 dB Colinear Base Antenna	**$100.65**

2 m BAND

SCA21T S/S ¼ Wave Whip	**$4.15**
SCA22T Fibreglass ¼ Wave Whip	**$6.15**
SCA25T Fibreglass 5/8 Wave Whip	**$12.90**
MB VHF Mobile Antenna Base	**$3.65**
C54 Guttergrip with MB Base	**$17.25**
C60 Trunkmount with MB Base	**$6.90**
GSA203 3dB Colinear Base Antenna	**$131.10**

H.F. BANDS

SC22DX 5 Band Trapped Vertical	**$129.00**
SC33DX 3 Element Triband Beam	**$P.O.A.**
HA6T 6' Helical Whips for 10,15,20,40 & 80 metres	**$39.70**
M27B Heavy Duty Base for HA6T	**$6.70**

MOBILE TRIBAND H.F.

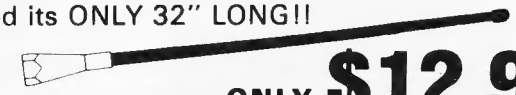
Run one, two or three H.F. Bands Mobile . . . without changing antennas!!

SC2M Mast - 5/16 Ferrule	**$15.85**
SC6M Mast - 3/8 Ferrule	**$18.70**
SC1015 Duo/Triband Attachment	**$18.70**
SC8OR 80 Metre Resonator	**$25.90**
SC4OR 40 Metre Resonator	**$20.15**
SC2OR 20 Metre Resonator	**$18.70**
SC15R 15 Metre Resonator	**$18.70**
SC1OR 10 Metre Resonator	**$17.25**

Be a DEVIL — Buy a PITCHFORK!

BREAKTHROUGH

3 dB Gain on a 2 Metre Mobile Whip and its ONLY 32" LONG!!



SCA26T **ONLY $12.90**

Also available: Baluns-Insulators-Quad Hubs-Antenna Traps-Reflector Coils-Magnabase.

PRODUCTS AVAILABLE FROM:

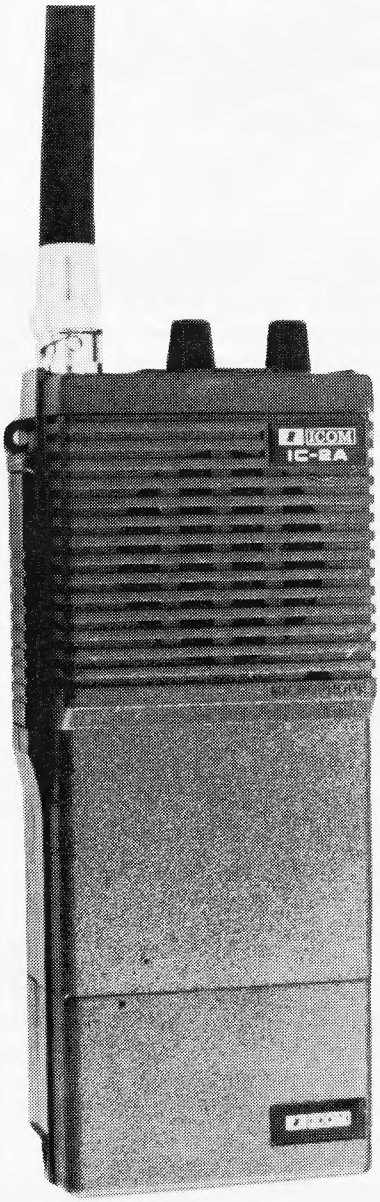
VIC.: SCALAR INDUSTRIES PTY. LTD.
20 Shelley Ave., Kilsyth (03) 725 9677

N.S.W.: SCALAR (N.S.W.) PTY. LTD.
20 The Strand, Penshurst (02) 570 1788
EMTRONICS (02) 211 0531
ELEKTRON 2000 (049) 26 2644

QLD.: SCALAR (QLD.) PTY. LTD.
8 Ferry Rd., West End (07) 44 8024
ELITE ELECTRONICS (07) 38 4480
CW ELECTRONICS (07) 48 6601

W.A.: EVERETT INTERNATIONAL PTY. LTD.
Northwood St., W. Leederville (09) 381 5500

"Quality is always the right answer."



Quality.
That's ICOM's new IC2A fm hand-held transceiver:

- ☐ Smaller and about half the weight of the others.
- ☐ Optional power packs for operation up to 5 watts output.
- ☐ Best sensitivity of the "big three."*
- ☐ Two hinged circuit boards for easy maintenance.*
- ☐ 800 channels, 144-148 MHz, 600 KHz repeater offset.
- ☐ ICOM's quality backed by 90 day warranty
- ☐ At $279 the ICOM IC2A offers the best price of the "big three".

Accessories coming soon:

BP-5	Nicad pack, 2-3W output
BP-6	Nicad pack, 5W output
CP-1	cigarette lighter charger
HM-9	Speaker/microphone
LC-1	Leather case

GIVE YOUR VICOM DEALER A CALL TODAY!

*See review "Amateur Radio Action" Vol 2/13

Distributed by VICOM

VICOM

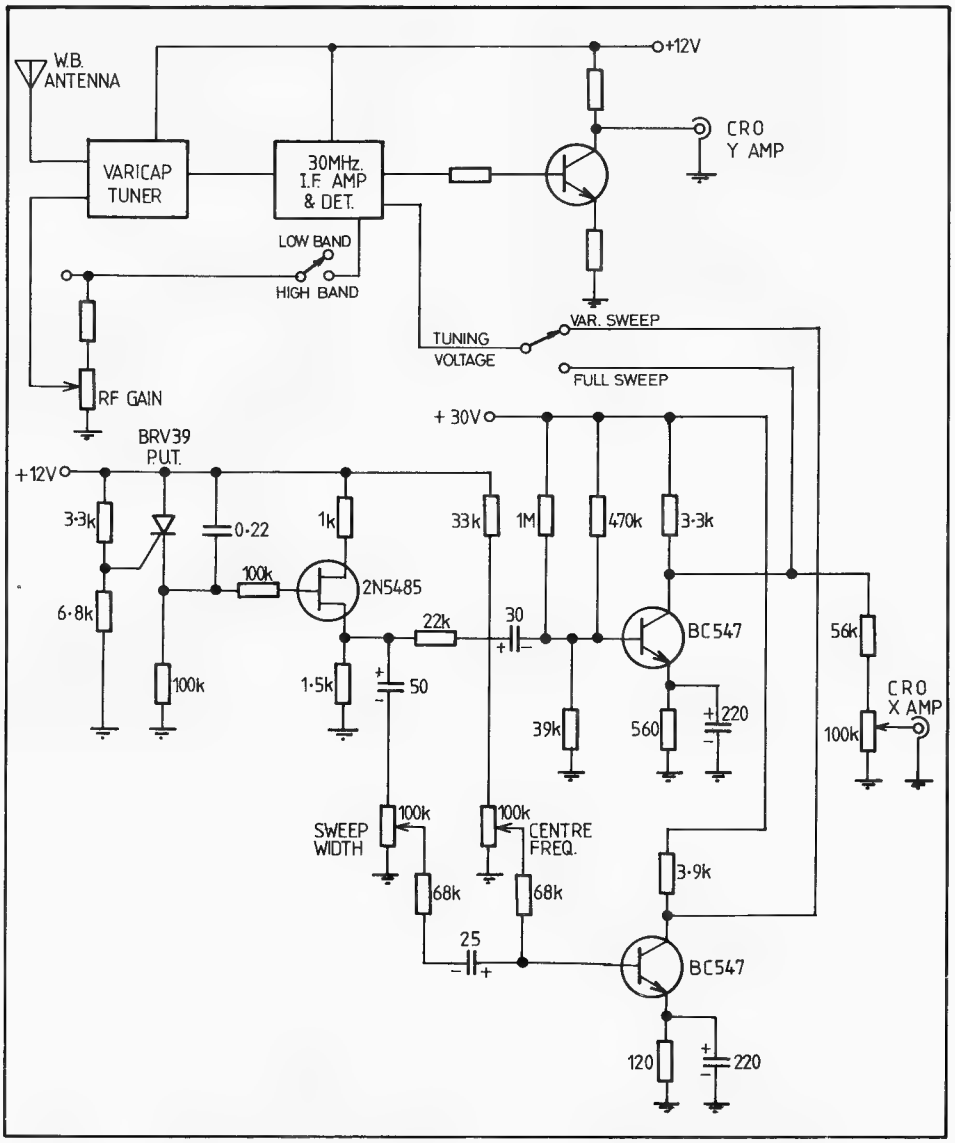
SYDNEY: 339 Pacific Hwy,
Crows Nest. Ph. 436 2766
MELBOURNE: 68 Eastern Rd.,
Sth. Melb. Ph. 699 6700

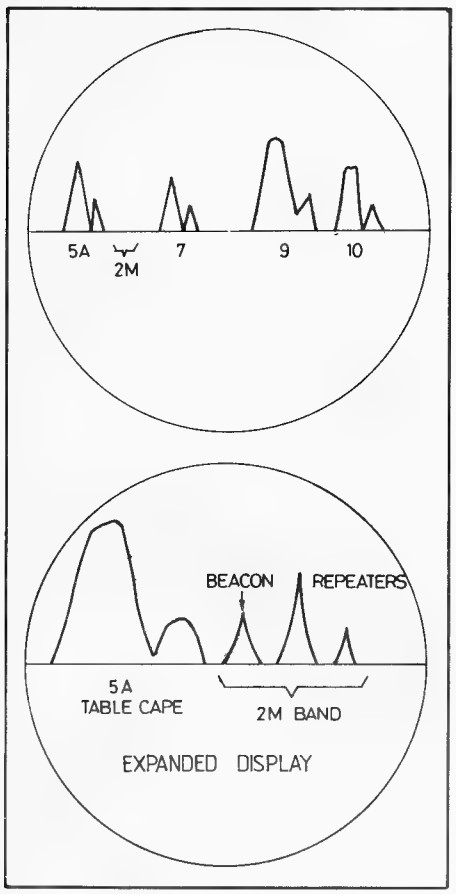
VICOM gear is available from most reputable dealers!

A Spectrum Scanner

W. Nickols VK7EM
4 Quinn St., Penguin 7316

This device, built from readily available parts, enables the VHF bands from 40-220 MHz to be viewed on an oscilloscope. Instantly it is possible to see what band conditions are like by observing distant TV channel frequencies. Also, at a glance, 2 metre activity can be seen and appropriate equipment can then be activated.





ABOVE: The spectrum scanner circuit and LEFT: The CRO display for VHF high band.

THEORY OF OPERATION

Briefly, a Varicap Tuner (as used in press-button tuned television receivers) can be tuned by applying a voltage, determined by a small potentiometer, one for each channel. The full channel allocation is usually covered in two ranges, while the UHF band can be covered in a third. If, then, by applying a repetitive sweep voltage covering the complete tuning range which is usually 0-30 volts, and with this also driving the X or horizontal amplifier of an oscilloscope, the bands can be swept. Any signals found will be detected and a voltage proportional to the signal strength will, if coupled to the Y or vertical amplifier will cause "pips" on the horizontal trace. Therefore on FULL SWEEP, either 45-140 MHz or 140-220 MHz can be displayed on the CRO at the one time. A section only of the band can be displayed by switching to ADJUSTABLE SWEEP and setting the CENTRE FREQUENCY and SWEEP WIDTH controls until the desired section is located and expanded.

CONSTRUCTION

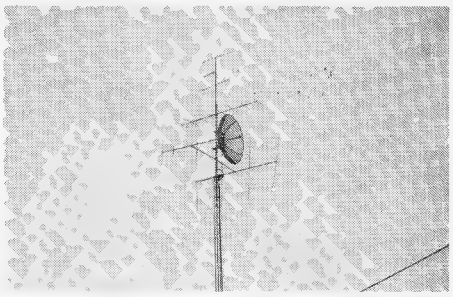
A Varicap Tuner can be obtained from several suppliers at a reasonable cost. The amplifier used in the prototype was from a wrecked Philips monochrome TV receiver. It was re-aligned simply by peaking the relevant tuned circuits and adjusting the traps until a narrow bandwidth, high gain amplifier was obtained. The video amplifier following the detector was retained and the output taken from where the sync separator was fed. Layout of the sweep board is not critical. Almost any CRO can be used providing it can accept external horizontal drive.

It is fascinating to watch the activity as mainland TV signals fade up out of the noise (or grass), the various two-way services busily occupy their segments and the strength at which home-station receiving equipment local oscillators radiate.

Reproduced from QRM June 1979. ■

A Decade in Review

The Expanding World on VHF in the 70s (Part 1)



Ten years have elapsed since that "momentous" occasion in 1969 when I was asked to fill the position of VHF Sub-Editor for "Amateur Radio". I was never sure whether to thank or kick Geoff Taylor VK5TY, the then VK5 Federal Councillor, for his recommendation that I might be suitable for the job! However, as history has shown, I did accept the position at the vast salary of nothing except the honour and privilege of the position, presenting me with a unique opportunity of moulding the VHF scene into a situation where it might be recognised for what it is, both in Australia and overseas.

That the VHF scene is recognised is supported by the scores of letters and bulletins I receive annually from all over Australia, New Zealand, USA and Japan, offering information of all kinds relative to VHF. It has always been my policy to acknowledge through the columns of "AR" all those letters sent to me — they all contain some item of news worthy of inclusion. In so acknowledging those letters it tends to keep the writers interested enough to send further news, and every now and again something outstanding arrives on my desk, making the effort worthwhile. I am rarely in a position to personally write in return, the column plus my many other public and community activities preclude this, but those who write are aware of this, and have accepted the situation.

The last ten years have seen considerable changes with the solid penetration of SSB in place of AM, together with a continuing interest on a smaller scale with CW. Repeaters and FM operation has spread nation-wide, ATV and RTTY are well known on the VHF/UHF bands. Single frequency operation as on HF has become the norm, whether SSB, CW, FM or even AM, with the advent of VHF transceivers and transverters. Operating aids which formally were the province of HF have found their way on to the VHF scene, items such as power and SWR meters, frequency counters, CW filters, power amplifiers, etc., so that today it would be no problem to spend more than $5,000 on a VHF/UHF station, and still not be wasting money.

Whilst the state of the art must have surely shown some improvements, particularly at the moment with the introduction of very low noise figure transistors, FETs and GAas FETs for use into the microwave regions, in many cases bigger and better antennae, more output power, etc., to offset this one has to remember a considerable increase in power line noise with the widespread coverage now given by high tension lines, the proliferation of interfering television stations, and the increases in population density in many areas leading to TVI problems, so that not all has been plain sailing. Despite these limitations the distances over which two-way communication has taken place are being constantly lengthened, and new world records set, particularly in the UHF regions; the term "expanding world", therefore, is very relevant, and will continue to be while there are still amateurs prepared to experiment, and after all, the VHF and UHF bands are the homes of the experimenters, who in turn are being constantly assisted by improvements made in commercial industry and the natural flow-on of better components and techniques which can then be explored further by the amateur.

Interest in propagation has been renewed with the solar activity of Cycle 21 reaching its peak about this time, mostly manifesting itself on the 50 to 54 MHz band and leading to two-way contacts halfway across the world. The northern hemisphere by reason of its amateur population and the geographical placement of participating countries has had the greatest share of exotic contacts, and will continue to do so. The majority of Australian amateurs therefore will only pick up the crumbs, so to speak, except perhaps for some operators living in far northern areas, but there will be enough crumbs for Cycle 21 to have been of great interest to those prepared to keep watching the 6 metre band.

And now we go have a look at what the past ten years has meant to us; no doubt what is written will refresh memories for the old hands, and be something new for the newcomers. It is written largely in chronological form and I hope will serve as a reference of sorts for the future. Thanks go to David VK5KK for assistance in the preparation of the material and to the Editor of AR for accepting it.

DECEMBER 1969

"The purpose of this page in the future will be to try and foster more interest in VHF/UHF, particularly with a view to promoting contacts with neighbouring and other States." That was the initial lead-in. First beacon list published p. 31 with initial prod at VK2 for lack of beacons.

Cook Bi-Centenary Award to include VHF section. VK5LP got Certificate 31.

VK7VF beacon warns of inversion, Allan VK2ZEO therefore worked Wilf VK7WF on 144 and Colins VK5ZKR worked VK7WF on 432.

Bob VK5ZDX built special 100 watt 6 and 2 metre portable field day station and joined Wally VK5ZWW to score 11,000 points to win VK5 Field Day.

Doug VK8KK Darwin worked HL9 on 51 as part of Cycle 20.

The VK5QZ standard of comparison 432 MHz converter developed. Over 50 sold!

The VK5 1296 MHz record set on 28-9-69 between Rod VK5ZSD, Eden Hills, to Alan VK3ZHU/5, South Hummocks, 75 miles, 5 x 9 both ways. Rod moves to VK2!

"Meet the other man" segment started with Mick VK5ZDR.

ZL1BFA and ZL1AJP had their second two-way contact on 5800 MHz over 86.25 miles.

John ZL1AZR continues EME skeds with SM7BAE and K0MQS.

First thought of the month: "In a democracy the votes of the vicious and stupid count. But under any other system they might be running the show."

First use of the signature "The voice in the hills".

JANUARY 1970

AM still in main use on 6 and 2 metres, but SSB increasing.

Move to launch a message across Australia and back again on 144. It was queried whether it might fail as VK6 was so far away!

JA1IGY beacon still on 51.995 MHz.

Beacon list growing, but asking for 2 metre beacons in VK2 and VK4.

Meet the other man VK5ZDX, with photo, said he was to erect four 7 element beams for 2 metres and get on 432 as well.

Wally VK5ZWW heard JA5DEI at 0845Z on 19-12-69 on 52.010.

576 MHz record set between VK5QZ/5 and VK5ZJL/5 5 x 9 both ways over 200 miles using 5 watts of AM and 32 element phased arrays.

Eight active stations in Melbourne on 1296 MHz, with skeds up to 50 miles.

Controversy over AM stations not being able to resolve the new SSB stations.

Meet the other man, Ron VK3AKC, who operates 52, 144, 432 and 1296 MHz.

New Australian record on 1296 MHz at 149 miles between VK2ZAC and VK2BDN set on 7-12-69. Setting their sights on 220 miles next time.

MARCH 1970
VK4VV beacon on 144.390 using MCW comes on air.

Tremendous 144 MHz opening across southern areas commencing 30-1-70 and continuing for four days and nights. About every station in VK5 with 2 metre equipment worked Albany stations, longest distance being to Bob VK3AOT, 1,550 miles.

Commencement of VK6TS beacon at Carnarvon on 52.900 while VK2ZRH reports spasmodic contacts with JA stations during November, December and January.

On 25-1 Brian VK5ZBR worked JA1, 3 and 7 to S9.

Suggested GMT be used for VHF contacts and QSLs, but opposition to move!

Meet the other man, Lance VK4ZAZ, who made the observations that some TEP conditions seem to be useless with SSB and CW — extra high level AM appears to be superior under these conditions.

APRIL 1970
Herb VK3NN works VK6KJ on 2 metres.

Possible 432 MHz record between VK5ZDY and VK3ZYO over 410 miles.

VK3AKC and VK7WF maintain 1,296 skeds over 4 to 5 months, finally rewarded on 4-2-70 with two-way contact at 1000Z, 223 miles, same again on 5-2, then VK3ZXB worked VK7WF for 250 miles. Also on 5-2 VK3ATN worked VK7WF on 432 for 370 miles.

VK3AOT had caravan trip to Mt. Buninyong for 420 contacts on 52, 144 and 432. Enough blow-outs and vehicle troubles getting there and back to satisfy most people! Best contacts AX1ACA/2 and VK2ZKP/2.

Comment in VK6 Bulletin that John Moyle FD Contest creates little interest in that State due to poor scoring arrangements for VHF.

VK5LP and VK5QZ take gear for 160 metres to 432 MHz for John Moyle Field Day. Struck hottest day of year, 112°F in caravan, heat sinks boiling, and very few contacts!

144 MHz beacon on Oscar 5 goes silent.

Mt. Gambier operators work VK2, 3, 5, 6 and 7 on 144 MHz. VK3ATN worked VK1.

Meet the other man, Eddie VK1VP.

MAY 1970
Letter from VK2ZTM reporting plans for 6 and 2 metre beacons in Sydney, also 432 and 1296 beacons will double as WIA broadcast transmitters!

AX7ZRO with 1 watt works two stations in Mt. Gambier and four in Melbourne on 144 MHz from top of Mt. Wellington.

Lance VK4ZAZ reports JAs each day since 5-2-70, and has now worked nine countries on 6 metres.

Mention made of QST article of 1940 on then VHF records: 56 MHz W1EYM—W6DNZ 22-7-38, 2,500 miles; 112 MHz W9WYX/9—W9VTK/9, 7-10-39, 160 miles; 224 MHz W1AIY—W1KLJ, 27-4-40, 6 miles. A further claim of 200 miles on 112 MHz was being considered.

Meet the other man VK5QZ, who operates on 52, 144, 432, 576 and 1296 MHz, and holds the 576 MHz record at 200 miles with VK5ZJL.

JUNE 1970
Record issue of notes so far, two full pages! JA1IGY 51.995 and WB6KAP 50.091 new beacons added, latter heard by VK4RO and VK4ZPL as well as VK8KK on 28-4-70.

VK3 and VK5 work JA for five hours on 25-4 from 0530Z, signals to S9.

Suggested rules for working DX when close neighbours both on band!

Ron VK3AKC wins 1969-70 Ross Hull Contest with 3,388 points.

VK5LP asking for better deal for VHF operators in Remembrance Day Contest, also worried by lack of interest in Ross Hull Contest.

VK2ZEO working regularly into Melbourne on 432 at 160 miles.

Beacons for 6 and 2 metres being considered in Darwin. VK3 beacon soon to be on air.

Editor of AR disagrees with VK5LP on suggestions for operation of worked-all-bands award!

South East Radio Group in Mt. Gambier now have club station VK5SR.

Project Moonray — world-wide DX on 432 MHz. Sam Harris W1FZJ/KP4 has a 100 foot square parabolic type reflector built on the ground to achieve this. Gain 31 dB on 144, 40.2 dB on 432.

1296 MHz activity in Queensland, AX4NO works AX4ZT 217 miles on CW, AM and FM, on 11-4-70. Extended to 248 miles on 12-4.

Growing interest in FM repeaters in VK5, prototypes being tested.

VK8KK and VK8AU keeping skeds with W6ABN, WB6NMC and W6JRA on 6 metres, but nothing heard so far, although the Ws running up to 600 watts with stacked 9 element beams! JAs working KX6HK on 52.2 AM.

Meet the other man, VK7WF, who operates on 52, 114, 432 and 1296 MHz.

JULY 1970
Brian VK6VV/4 worked DU1MM on 52.120. Doug VK8KK missed this one as he was inside watching the wrestling on TV! On 22-3 JA2AYM worked VS6BF 50.100. W6ABN reported in April first TEP 50 MHz DX for season to South America. ZK1AA regularly working to KH6, plus K5AGI.

VK9JL on 53.032 from Madang.

VK2ASZ reports Russian TV on 49.750 and ZL TV during April, and then proceeded to work 58 JAs for good measure; JAs worked by VK1, 2, 3, 4, 5 and 7.

Meet the other man, VK2ASZ, who operates on 52, 114, 432, and who holds WAS 50, VHFCC 50, VHFCC 144, AJD and several Ross Hull certificates!

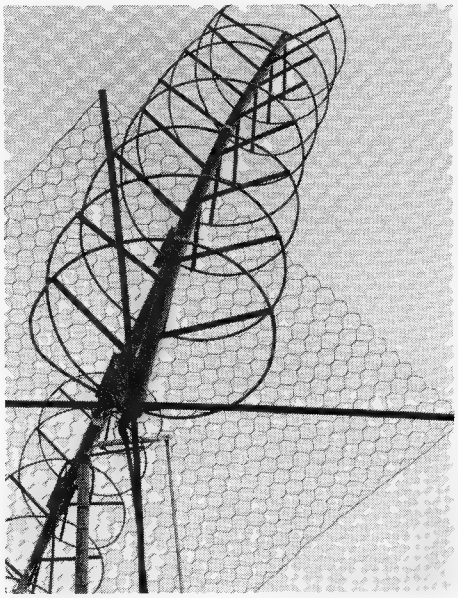


PHOTO 1: An antenna widely used for specialised purposes — the Helix.

VK8KK worked VS6DA Hong Kong for probably first VS-VK on VHF, on 2-6-70 via TE scatter, signals 5 x 9, operated split 50.110 to 52.110. Later proved that VK5RO heard VS6CJ on 30-3-58 and VK6HK worked him early April. Doug VK8KK has now worked 14 countries on 6 metres.

AUGUST 1970
VK8KK, Darwin, and VK8AU, Tennant Creek, working via CW scatter occasionally.

Report on VK2 mid-winter field day mentions a two-way contact by VK2ZNC/P on 10 GHz using 25 mW to an 8 in. parabola 40 feet high!

VK2ZRH reported TV sound on 49.750 from north on 14 occasions during April and May, and worked a number of JAs.

Keith VK5ZKG going to Antarctic for 12 months.

SEPTEMBER 1970
VK4ZAZ reports receiving QSL from KX6HK for hearing him in April!

Peter VK5ZPG goes to Pt. Lincoln and opens up that area on 2 metres.

A 1947 QST mentions first 50 MHz contact between VK5KL at Darwin and Hawaii to W7ACS/KH6 taking place on 27-8-47, distance 5,350 miles, a new record.

A new home station record on 144 MHz between VE1QZ and W1OSQ of 520 miles.

OX5AP testing on 50.150 from Greenland.

OCTOBER 1970
Letter from VK3BEC advising construction of 580 MHz beacon. What became of it? Work still progressing on VK3 beacon. VK6VE Albany beacon heard in Geelong on 7-8 at S3.

VK7EM now on ATV on 426 MHz.

Main FM channels currently in use are Ch. A and Ch. B, the latter being the more popular.

VK8AU reports JAs again on 6 metres, while VK8KK predicts 1971 will be a bumper year for TEP working.

Six metres coming alive with scatter contacts between VK8AU, Tennant Creek, and VK8KK, Darwin, and to Wally VK5ZWW/5, at Andamook Opal Fields, and Bov VK6ZDX, Adelaide. Good outline of meteor scatter procedure p. 24.

NOVEMBER 1970

VK9XI a new beacon on Christmas Island on 144.600.

Kerry VK5SU at Ceduna commences operation.

Write-up of EME activity of ZL1AZR.

VK8KK reports excellent conditions on 6 metres with up to five countries being available most nights. HL9WI runs beacon on 50.100.

Meet the other man, Ross VK4RO, on 52 and 144, and Doug VK8KK on 52, 144 and 432 MHz.

DECEMBER 1970

Latest method of finding north — see column 1, third paragraph — well worth reading!

VK8AU worked JA1MAS on 6 metres, 4 x 3, using 10 mW!

John VK4ZJB going to be on 53.200 with 150 watts and 10 element beam!

Starting and finishing dates of Ross Hull Contest lengthened.

Bob VK3AOT going portable on 52, 144, 432, 576, 1296 and FM!

Extensive 144 MHz openings across USA with distances up to 1,300 miles.

Colin VK5DK reporting their Club station VK5SR would be operating all bands from 80 metres to 1296 MHz during New Year weekend.

JANUARY 1971

WB6KAP beacon on 50.091 listed — also heard by VK2ZBU 599 on 8-11-70 0300 to 0430Z. JAs in Sydney at same time.

Balloon sent up from Mildura carrying translator equipment, input 146.000, output 432.170, power output 2 watts.

Preliminary advice from VK3ATN his dish available to interested groups for EME experiments.

Sam Harris KP4BPZ bought 28 acres near the 1,000 foot dish at Arecibo, and hoping to improve his own 100 foot dish by extending it to 300 feet!

Meet the other man, VK3ATN, operating on 52, 144 and 432.

FEBRUARY 1971

Beacon list grows to 15 stations, VK3VE finally made it, but still no sign of any VK2 beacons.

Christmas Island contacted Port Hedland on 156.8 MHz using commercial equipment, distance 960 miles.

ZL stations on 6 metres to VK5 for first time in over a year.

C21AA in Nauru worked VK2ZRH and VK4ZRW on 6 metres on 20-12-70. Es at a very high level compared with some previous years.

Garry VK5ZK worked Bernie VK6KJ, Albany, 5 x 8 0100Z on 15-12.

Tony VK5ZDY at prime spot in Stirling having good contacts on 144 and 432 to VK3, plus 576 MHz contacts to VK5QZ and VK5ZWW.

Noel VK9GA running a beacon on 52.150.

MUF rises to well over 100 MHz as observed on TV sets, predictions for possible good Es on 144 MHz for end of 1971.

MARCH 1971

VK0GA beacon on 53.544 at 2 w.p.m. for 55 seconds. Others operating from down south include VK0PF, VK0MX and VK0ZPO.

VK5 repeater goes into operation, running 15 watts, solid state equipment.

Ken VK3ZNJ gets WA ZL areas by working ZL4PG on 4-1. VK3AOT worked VK4ZAZ on 12-1 on 144 MHz.

VK3ATN to try to work G3LTF on 1296 MHz EME with 100 watts.

KP4DJN has 100 foot dish for EME steered by movement of the feedline.

Meet the other man, George VK3ASV, on 52 and 144.

APRIL 1971

VK8AU works JA1MRS, HL9WI and KR6CR.

1296 MHz record broken again, Ron VK3AKC works Kevin VK7ZAH, 274 miles.

HL9WI worked five VK6s, VK8KK and VK8AU.

Meet the other man, Wally VK5ZWW, on 52, 144 and 432.

MAY 1971

ZL going ahead with beacons for 2 metres, and Albany amateurs building beacon for six metres. VK2 talking about building 6 and 2 metre beacons.

Bill VK3AMH workers Bernie VK6KJ on 2 metres after hearing the Albany beacon.

Ron VK3AKC works VK7ZAH and VK7EM almost daily on 432, and to VK7ZAH on 1296 with skeds. VK5ZER, Mt. Gambier, testing on 1296.

RTTY starting to move in VK5 with VK5JE, VK5ZLA and VK5ZND operating.

JAs into Perth. VK5ZWW worked JA1ODA 52.010 SSB. VK3ZWF worked a JA3.

Hi-Ball experiment successful — first flight to 70,000 feet, second 100,000.

Harry VK5MY of HF CW fame finally comes on to VHF using phone and a beaut letter outlining his first experience using phone on HF!

JUNE 1971

ZK1AA added to beacon list, now totalling 19 stations.

KH6EQI beacon being heard by VK8KK, VK8AU and VK4RO.

HL9WI and C21AA regulars into Darwin on 6 metres, also many JAs.

VK1VP and VK2AAK running skeds on 144.1 with success.

JA2IIY worked an LU3 on 16-4, while VK4ZRW heard W2 on CW.

Bob VK3AOT stirring up activity on 576 MHz, worked VK3BDA over 143 miles, and VK2ZEO at Deniliquin trying 432 to VK3ZDW.

David VK8AU sponsoring a VHF/UHF Contest for July.

JULY 1971

VK0PH, Casey Base, works a station on Macquarie Island for possible first 6 metre Antarctic area contact.

David VK8AU to return to VK3, hopes to try 1296. Is also "Meet the other man" for this month, currently on 52 MHz.

AUGUST 1971

Bob VK3AOT to try and work Tony VK5ZDY on 576 MHz to take the record off VK5QZ!

Further information on requirements for successful 6 metre meteor scatter contacts makes good reading, second column.

SEPTEMBER 1971

New publication, "The Victorian VHFer" comes on the scene. Has 18 pages of VHF information, and very good. VK3AOT is editor.

Thoughts on having special segments for 2 metre beacons voiced, i.e. 144.5 to 144.7.

Perpetual trophy launched by SERG at Mt. Gambier for most successful amateur at their Convention — it's a 4CX10,000A tube suitably mounted, and won for the first time by Kevin VK3ZYP.

OCTOBER 1971

Two new solid state beacons being built in Albany, beacon list now 21 stations.

John VK4ZJB running 400 watts SSB on 144 MHz. He intends being heard!

JA1RNJ says VK stations being heard regularly in Japan but VK stations don't bother to listen for them!

Further useful information on meteor scatter contacts for the newcomer.

NOVEMBER 1971

Temporary 6 metre beacon appears in Sydney signing VK2II.

Advice of withdrawal of 21,000 to 22,000 MHz band from Amateur Service and 24,000 to 24,250 MHz substituted. Considered a better band anyway, as a peak in atmospheric attenuation occurs at 22 GHz dueto absorption of signals by water molecules.

"QRM", the bulletin of Northern Zone in Tasmania, arrives for first time at my desk.

Transition from AM to SSB on VHF becoming much more apparent — pleas are being made for stations to say if they are operating transceive or not!

DECEMBER 1971

Advice of an increase in activity on 6 metres from ZL4.

Albany beacon now operating on 52.950 MHz.

Len VK7BQ retires from amateur radio, aged 81. Commenced in 1925 on 200 metres, progressing through all HF bands then on to 50, 144 and 432.

Discussions on Project Australis and satellite frequencies.

Matter of the establishment of DX calling frequencies raised; it was suggested 52.010 could be suitable.

MARCH MADNESS IN JUNE?

YES! Your response to our Mad March Mailer was so encouraging we've decided to keep our March Madness prices going right through June! And we've even thrown in an extra special just to make life interesting!

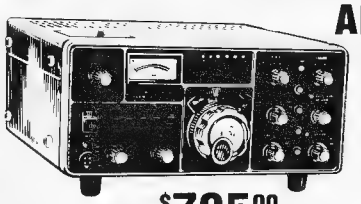
Hop in for your new Yaesu soon: you'd be a bunny to miss out!

Description	Cat No	Originally:	Now:	SAVING:
FT901D Digital HF Transceiver	D-2854	$1375.00	$1199.00	$176.00!
FT-101Z HF transceiver	D-2862	$849.00	$775.00	$74.00!!!
FT-301 solid state HF transceiver	D-2870	$895.00	$795.00	$100.00!
FT-227RB 2 metre with memorizer	D-2891	$445.00	$319.00	$126.00!!
CPU-2500RK CPU cont. 2m rig	D-2889	$575.00	$549.00	$26.00!!!
FT-7B HF mobile transceiver	D-2868	$649.00	$599.00	$50.00!!!
FL-2100B 1.2kW HF linear amp	D-2546	$599.00	$529.00	$70.00!!!
FC-901 antenna coupler	D-2855	$289.00	$265.00	$24.00!!!
DC/DC converter for 101Z/901	D-2856	$75.00	$69.00	$6.00!!!
Fan for 101Z	D-2865	$39.00	$29.50	$9.50!!!
YC-500S 500MHz freq. counter	D-2892	$499.00	$475.00	$24.00!!!
FTV-250 transverter	D-2894	$339.00	$299.00	$40.00!!!
FRG-7 communications recvr	D-2850	$395.00	$319.00	$76.00!!!
FRG-7000 digital comm. recvr.	D-2848	$695.00	$599.00	$96.00!!!

Remember: Even these low, low prices are subject to our exclusive 'won't be undersold on Yaesu' guarantee (see details below). You can't lose . . .

TERMS WELCOME – OR USE YOUR BANKCARD.
We'll send any of these transceivers anywhere in Australia for just $6.00 extra by road freight: that's below cost. Take advantage of this offer soon!

INCREDIBLE SAVINGS ON YAESU 6m RIG: ANOTHER $100.00 OFF!!!



Cat D-2886 $795.00

Yes, this superb 6 metre transceiver is being sacrificed. All modes (yes, FM too) on 6 metre band. Was incredible value at $795.00 . . . look at what we've done to the price now! Hurry, stocks won't last at this price!

$695.00

Dick Smith personally guarantees to beat any genuine Australian advertised price on Yaesu amateur radio equipment. If you find a current Australian advert with lower Yaesu prices than ours, take the advert to a Dick Smith store in the city the goods are being offered in. After confirming the advertiser has stock available to sell at that price, we will offer a lower price. If the re-seller is in another city, we will better the price plus freight charges to get the goods to your location.

DICK SMITH ELECTRONICS

NSW	125 York Street,	SYDNEY	Ph 290 3377
	147 Hume Highway,	CHULLORA	Ph 642 8922
	162 Pacific Highway,	GORE HILL	Ph 439 5311
	30 Grose Street,	PARRAMATTA	Ph 683 1133
	263 Keira Street,	WOLLONGONG	Ph 28 3800
	613 Princes Highway,	BLAKEHURST	(Opening Soon)
VIC	399 Lonsdale Street,	MELBOURNE	Ph 67 9834
	656 Bridge Road,	RICHMOND	Ph 428 1614
QLD	166 Logan Road,	BURANDA	Ph 391 6233
	842 Gympie Road,	CHERMSIDE	Ph 59 6970
ACT	96 Gladstone Street,	FYSHWICK	Ph 80 4944
SA	60 Wright Street,	ADELAIDE	Ph 212 1962
WA	414 William Street,	PERTH	Ph 328 6944

bankcard welcome here

SHOPS OPEN 9AM to 5.30PM (Saturday: 9am till 12 noon) BRISBANE: Half hour earlier. ANY TERMS OFFERED ARE TO APPROVED APPLICANTS ONLY

RE-SELLERS OF DICK SMITH PRODUCTS IN MOST AREAS OF AUSTRALIA.

MAIL ORDER CENTRE: PO Box 321, NORTH RYDE NSW 2113. Ph 888 3200. PACK & POST EXTRA.

Ron VK3AKC presented with VK3 VHF Group trophy for his earlier 1296 MHz contacts to VK7ZAH.

JANUARY 1972

Beacon list shows 26 stations of which about half are overseas. Only the VK5, ZL and 145 MHz and KH6EQI beacons remained unchanged from original listings.

Repeaters becoming more common with introduction of VK3WI/R3, Latrobe Valley, VK7WI/R2, Mt. Barrow, and an unusual experiment near Moe, Victoria, a repeater with 147.760 in and 432.2 out!

SSB gaining a good grip on VHF but still plenty of AM stations around.

VK0MX heard in Sydney on 25-11 and 26-11-71.

VK4ZTK worked at least 200 JAs in last equinox.

FEBRUARY 1972

This issue carried DX and records of some fame. The first VK-VE 144 MHz EME contact between VK3ATN and VE7BQH on 1-1-72, also present was K6MYC, all during an "unusual half-hour window" to the moon from 1140Z.

A new Australian 10 GHz record between VK5CU/P and VK5ZMW/P on 30-12-71. Weather indicated no tropo assistance, gear all solid state except for Klystrons. Power out about 100 mW.

VK4RO heard VK0ZVS on 52.1 at 0945Z on 2-1, running 20 watts to 4 element from Macquarie Island.

Approval given for beacons VK0GR on 53.1 and 53.2 at Casey and Mawson respectively, to run 200 watts input, mode A2.

FM'ey AM stations get the cane but poor SSB signals also need a bit of cleaning up too; seems like things are still caught up in progress!

During VK2 Field Day VK2ZZI/P worked ZL2TGT, ZL2TLY and ZL3AR/2 on 2 metres. VK2TK/P also worked two ZLs. Bob VK5ZDX worked Aub VK6XY on 2 metres 3-1.

Nothing new on 144 tropo (and Es) . . . VK5LT and VK5LP heard (saw?) Ch. 5A, Wollongong, on 29-12-71, a good indication that Es is on its way back after the Cycle 20 dump.

MARCH 1972

Reports of 2 metre tropo to Albany from Adelaide and Mt. Gambier.

Claim for first contact within Antarctica between WB5DYJ/KC4 McMurdo Sound to VK0PF, Casey Base, on 6 metres, distance 1,200 miles, 559 both ways. Also VK0PF heard by UA1KAE/1 at Russian base in Antarctica.

Who can remember the Ionospheric Prediction Service and the early warning system for TEP on 6815 kHz?

Some interesting results on something which still hasn't been exploited greatly, namely 144 MHz meteor scatter . . . Rod VK2ZQJ and John VK5QZ are conducting experiments using this form of propagation.

VK3YEO to VK7JV with one-way SSTV on 144 MHz!

APRIL 1972

More on 2 metre tropo from Albany. The old 10 kW WRE tropo beacon on 135 MHz pops up a lot from Albany.

JAs to VK5ZWW (who else?) on 26-2-72. Also much VK3, 5, 7 tropo DX with another first. VK3ZPA to VK7EM on 70 cm ATV on 26-2, with noise free pictures. Also first reception across Bass Strait by VK3ZBZ on 24-2 from VK7EM. And on 1296 Ron VK3AKC continues to work Kevin VK7ZAH.

MAY 1972

C21AA heard VK8VF on 52.2 MHz.

On 18-3 band open to JA from VK2, 4 and 6 and also KX6 and KR6 to VK4ZJB.

VK5ZDY worked JA1, 7, 8, 9, 0 on 22-3, while VK4ZJB worked C21AA on 1-4-72, and VK4ZEL also.

8P6EN (ex VK5ZEI) had worked 34 countries on 6 metres from Barbados!

JUNE 1972

TEP summary. Good conditions to VK4 from 20-2 to late April. Lesser to VK2, 5 and 6 with most countries around late March to JA. KH6HK worked VK4RO and other VK4s. C21AA worked KH6HK on 22-3.

Further complaints about rules for the Ross Hull Memorial Contest.

JULY 1972

Christmas Island beacon off air, DCA resumed equipment!

on 13-3-72 on 432 MHz, own echoes heard. On 18-4 worked WA6HXW.

Roger Harrison VK2ZTB clears up some misconceptions on subject of TEP.

2300 MHz experiments between VK2BDN and VK2ZAC continue.

Results of antenna gain contest published in Victorian VHFer show wide variation; winner a 13 el. yagi on 24 foot boom with 14 dB down to a 5 element yagi with — 12 dB!

Ian VK3ALZ develops quad-yagi on 33 foot boom with reputed gain of 19 dB.

AUGUST 1972

1296 MHz preparations for EME in shacks of VK3AKC and VK3ATN, while VK2AMW prepares to work OZ7UNI in Denmark on 432 MHz.

Some interesting notes on making observations on tropo from the weather map, work which was pioneered by Mick VK5ZDR.

Bill VK4XZ suggests 6 metre beacons operate from 52.4 to 52.5.

SEPTEMBER 1972

VK2 beacon finally comes on the air, 52.450 MHz.

Some good points raised on having exclusive 6 metre beacon segment.

Meteor scatter between VK2ZQJ and VK7ZJG and VK5ZWW on 6 metres.

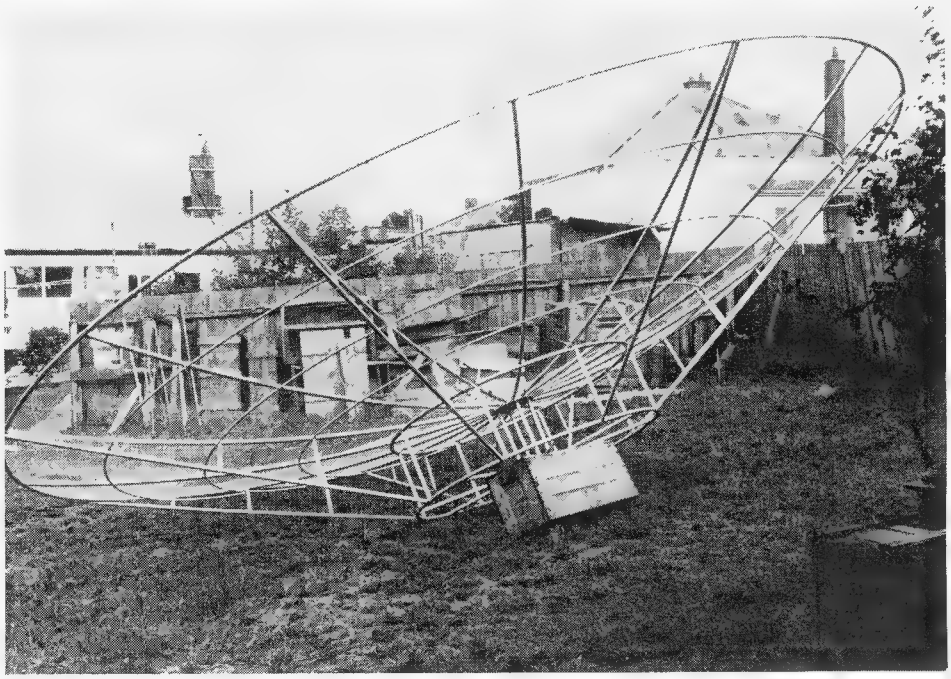


PHOTO 2: The 1296 MHz dish of the late Ron Wilkinson VK3AKC. Ron's efforts on VHF/UHF were outstanding.

Suggestions again for 2 metre beacons to be located between 144.5 and 145.0.

XE1PY reports almost daily openings to South America on six from 1-3, and hearing VK and ZL video signals.

On 21-5 Tony VK5ZDY worked nine VK3 and three VK7 stations on 144 MHz.

VK2AMW EME station at Dapto first tests

OCTOBER 1972

Roger VK2ZTB going to Cocos Is. until end of 1972.

VK5SU at Ceduna on 27-8 worked many parts of VK5 on 2 metres, very rare.

Groundwave contacts on 2 metres between VK2ZQJ, Sydney, and VK2ZAY,

Boggabri, very consistent over this 250 mile path.

Interesting report on Apollo S-band signal reception.

NOVEMBER 1972
2300 MHz record claim. VK2BDN/P to VK2ZAC on 3-9-72 on 2304 MHz AM, distance 28.5 miles.

WA5HNK looking for 50 MHz EME contacts. Low noise location essential.

VK3 antenna test day must have embarrassed some people — even those Orr and Johnson designs as well as other types work poorly if the measurements are not followed!

DECEMBER 1972
More 2 metre tropo between VK3, 5, 6 and 7. Also VK2ZAY, VK2ZRH, VK2ZQJ and VK2BKL, all into 2 metre groundwave contacts.

First substantial JA opening for September equinox to VK4 on 28-9-72. 1 watt of SSB from VK4ZEL was sufficient to work the lower JA areas.

Everyone getting ready for a repeat of the 1962-64 style Es openings on 2 metres.

Oscar 6 is up and tumbling.

JANUARY 1973
Report on EME efforts of Chris VK5MC on 144 MHz. First echoes heard on 24-10-72. On 28-10 Chris recorded 11 minutes of echoes from 0054 EST. Power 100 watts from one 4X150A into 4 stacked rhombics with 50 wavelengths per leg. Receiver . . . MPF131 front end converter to FR100. Active AF filter giving 200 Hz bandwidth.

Also details of a revised 2 metre FM channel system.

FEBRUARY 1973
First working of VK0 to mainland to VK2 on 10-12-72, but on 11-12 VK0ZVS and VK0WW both worked by VK5ZWW and VK5ZMW at 1830 local peaking to S7. Later VK2 and VK3 heard working those stations. At 2137 local VK5ZDX heard VK0GR at Casey at 5 x 4 using FSK ident but no contact. Local conditions excellent with both backscatter and short hop Es to VK3.

On 11-12-72 VK5ZDY worked VK6WG on 432 MHz for a new Australian record of 1,185 miles and not far short of the world record of 1,215 miles.

VK8KK reports seeing VK7JV on SSTV via Oscar 6, while VK7EM looking for ATV skeds and reports from VK3 at least.

Roger VK9RI (2ZTB) reports hearing VK8VF and VK5 and VK6 beacons on 6 metres from Cocos Is.

MARCH 1973
VS6DA and VS6BE active on 6 from Hong Kong.

VK9BP, Port Moresby, on 6 with 400 watts and hoping to run a 4-250 on 2m SSB.

On 22-12-72 Lance VK4ZAZ, Rockhampton, worked VK3AOT, VK3AOS and VK3CI via 2 metres Es.

On 28-12 VK5ZMJ heard in Sydney with strong signals on 2 metres.

VK7EM had two-way with VK3ZPA on ATV on 13-12. Also viewed by VK3ZBZ, VK3YEC, VK3YGB, VK3ZBB and VK3ZSB.

VK3ASQ's famous 6 and 2 metre transverters reviewed from January 1973 Geelong Newsletter. Wonder how many people used the ideas or parts eventually?

APRIL 1973
VK0WW worked about 30 VK stations from VK2, 3, 4, 5 and 7 in 72-73 season. First contact to VK2NN on 10-12 with 5 x 9 SSB.

On 1296 EME VK3AKC worked W2NFA at 2228 EST on 19-2-77, first such QSO to Southern Hemisphere. VK3AKC was 339 and W2NFA 559. Equipment used by VK3AKC a 20 foot dish, horn fed with a pair of 3CX100A's. Two stage mast head pre-amp on receive.

Thought for the month: "Blessed are they who go round and round in little circles — for they shall be called 'Big wheels'."

MAY 1973
Geelong Amateur Radio Club mounts a campaign "RETURN TO TWO" to try and overcome the decline in 2 metre activity of recent years.

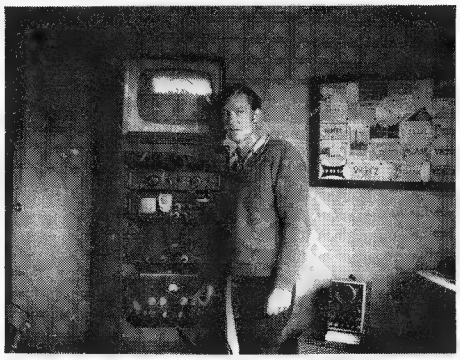


PHOTO 3: Peter VK3ZPA adjusting his 432 MHz AN transmitter. In August 1973 Peter co-held the official record for VK ATV when he worked VK7EM — a distance of 257 miles.

"6 UP" reappears under the leadership of Roger Harrison VK2TB, and challenges the Darwin boys to get on 144 MHz and work TEP!

Bendigo repeater now operating on Ch. 4.

JUNE 1973
Four VK1s working via Oscar 6.

VK1ZT copied W2NFA during contact via EME to VK3AKC, and attempted to work VK3AKC on 1296 but could only hear radar pulses whilst portable on Mt. Ginini.

VK1MP heard VK2ZAY on 2 metres, distance 340 miles.

VK5PB worked JAs at 2030 EST on 24-4 after accidentally turning on his 6 metre rig!

Continuing reports of meteor scatter activity.

Plenty of JAs to northern parts of VK still in autumn 73 equinox.

JULY 1973
Good tropo between VK2 and Melbourne with VK2NN working VK3ZNJ two-way SSB 5 x 9.

Geelong Amateur Radio Club celebrates its 25th anniversary.

VK5AO, VK5ZOF and VK5ZEF all using colour on 70 cm ATV.

"RETURN TO TWO" campaign in full swing with some thoughts on converters, old and new. RTV and H 6ES8 converters still OK.

AUGUST 1973
New 2304 MHz record for Australia. VK2ZAC/P worked VK2BDN/P from Mt. Gibraltar (Bowral) to Mt. Kulmura, 5 x 8 over the 100.5 miles path.

Official record for VK ATV goes to VK7EM and VK3ZPA for 257 miles contact.

Thoughts on curing RF feedback with 2 metres and the FT200.

Good tropo conditions, VK5ZDY worked VK2BDT 90 miles west of Sydney on 20-5, on 2 metres. VK2NN worked VK3AJN, Wangaratta, on 11-5, and still on 2 metres.

VK1MP working into Sydney with 3 watts on 27-5, and on 28-5 those to work Sydney included VK1VP, VK2ZAA, VK2ZEO, VK3AJN, VK3ANP and VK3APF, so please don't say it can't be done!

SEPTEMBER 1973
New by-law for amateur equipment importation, originally excluding HF equipment.

FM nets get the cane with ever increasing use of "appliance".

Bendigo repeater operating on low power from Flora Hill.

OCTOBER 1973
VK2HZ reports excellent Es conditions between 8-7 and 14-7, MUF high across the Tasman with lower TV channels being received in early evening during this period.

VKOWI heard in Sydney on 12-7 from 1715 to 1810 EST.

Following stations had worked meteor scatter from VK2, namely ZQJ, AM, AQG, ZVD, ZXL, ZYP, ZAY, BHO and TB. VK2BHO and VK2ZAP often heard in Sydney on backscatter MS.

NOVEMBER 1973
EME report from VK2ALU; K2UYH received on 43 2MHz with 7 dB or more clear of noise. Stronger than echoes originating from VK2ALU had been up to this time.

ATV colour first? VK5AO and VK5ZEF claim first duplex (579 and 441 MHz) colour QSO on 17-9-73. VK5AO was on 579 MHz and simultaneously VK5ZEF transmitted on 441 MHz.

VK8AZ worked JAs plus KG6RA on 27-9 on 6 metres. VK8DI also present.

JAs hearing VK8VF beacon consistently throughout the openings.

DECEMBER 1973
More changes to beacon call signs. New VK6 beacons.

State of the Art contest winner VK5ZWW, who entered only his 6 metre scatter contacts.

Also some interesting distances on 144 MHz and a 30 mile contact on 1926 with 0.2 watts between VK3AUU and VK3ZBJ

VK3AKC allowed 500 watts input on 1296 MHz for EME with the usual 10° elevation bottom 1 mit.

Oscar 6 all the rage . . . VK5ZWW using 3 watts into a ¼ wave on a shed roof!

JANUARY 1974

Large scale openings in November herald Es season. VK3ZAZ reports hearing VK0WI at 1430 EST on 21-11 at over S9 but no contact made.

VK3AKC's EME contact on 1296 MHz confirmed as world record. An interesting and exact tabulation of everything used both ends (right down to the 75AW connectors) was given. Contact VK3AKC to W2NFA on 6-10-73 on 1296 with Ron's signal 10 dB above noise for three minutes.

15-10-73 VK3ATN worked VE2DFO and W6PO on 144 EME. VK5MC also heard KH6NS on 17-10. On 27-10 and 28-10 getting SSB echoes (his own) back from the moon.

FEBRUARY 1974

Some good scores noted in Ross Hull Contest. A comment noted "Some were very cagey about their high scores, whispering them just loudly enough into their SSB rig for the other end of the contact to hear and with hopes of no one else!"

VK5ZWW challenged VK5SU to top honours in contest, but failed!

SSB stations outnumbered AM, increased FM and CW activity noted also.

In VK5 the 6 metre band opened to DX on 23 days in December with best days on 15, 22, 23, 30 and 31-12, which would be normal for the centre of cycle. 30-12 and 31-12 were so good that all States plus ZL districts were worked

As predicted at end of last year's ES season, 144 MHz did really peak with Es activity, e.g 22-12-73 VK3AMK and VK3ZAZ worked VK4. VK1VP worked VK4EN and VK4ZAZ on Ch. B VK1MP worked VK4ZAZ on Ch. B. VK2ZRH copied VK5SU and worked crossband to 6 metres but no direct contact VK5ZDY worked VK2ZRH VK2GX to VK4EN Both VK2ZRH and VK2GX copying VK5VF beacon.

On 23-12 VK5SU worked VK2ZRH, and heard by VK2CG and VK1MP VK5DK heard VK4ZAA and VK2ASI on Ch B, moved down to low end and worked VK4FE VK5NC worked VK4FE. 28-12 VK3ADT/P worked by VK5s.

30-12 VK4ZBB worked VK2ZBP, VK4ZDI and VK4EL worked VK3AMK, VK5MC worked VK4ZEL. 1-1-74 VK2ZRH heard VK5VF and VK5SU. VK5RO and VK5ZWW worked VK2ZRH VK2ZQJ heard VK5ZWW, and VK5RO heard VK2ZQJ but said he was too strong to resolve successfully! VK5SU worked VK1VP, VK1MP and VK2AM, while VK1VP heard VK5VF (And you can reasonably expect that sort of thing to happen again about 1984 . . 5LP.)

Now while all that exotic 144 DX was going on, Ron VK3AKC wasn't mowing the lawns. He and Kevin VK7ZAH worked each other on 1296 on 27, 28 and 29-12, each contact worth 250 points in the Ross Hull Contest, and for good measure they did have contacts on 144 and 432!

Steve VK3ZAZ advised he was using an 88 metres per leg rhombic on 6 metres fixed on NE Australia. It has a gain of 12 dB, and is used for scatter work.

MARCH 1974

Summing up, an excellent Es season. The last of the wobbly AM stations get another lecture! VK3AMK outlines pertinent points. VK5LP said calling frequencies of 52.050 and 144.100 were OK by him although he did mention 52.100 was on a calibrator point on most transceivers and may therefore be slightly more accurate for meteor scatter, etc. But it seems 52.050 fairly firmly entrenched as the 6 metre calling frequency.

Geoff VK3AMK confirms working many VK4s on 2 metres during December

Some serious shack losses due to flooding in Queensland

APRIL 1974

VK7ZAH and VK3AKC reported as having contacts twice a day for many days during Ross Hull on 52, 144, 432 and 1296 MHz!

Some words in favour of 2 metre FM operation on nets by VK2YC

MAY 1974

VK2WI beacon back on air. VK1RTA receives its licence, which means all States are now represented by beacons.

VK5ZWW reports VK0WI heard at 2005 EST S3 on 9-3-74, and worked JA3, 6, 7 and 9 on 23-3 from 1530 to 1730 EST. Again on 24-3, and 30-3. VK4ZIM worked JA8.

No reports of VK3 or VK7 to JA this equinox.

Oscar 7 reported and its clash with the old VK2 Ch. 4 output on 145.9, right in the middle of the passband!

VK5ZWW moving to Orange, NSW. Coincidentally, no more JA or KH6, etc., for two years down south!

EME report from VK2AMW/ALU with details of K2UYH tests.

JUNE 1974

YJ8KM, visiting Australia, shows great interest in 6 metres.

EME report: New 432 MHz EME world record VK2AMW to G3LTF on 30-3-74.

5.6 GHz record between VK2AHC/P, Kurrajong Heights, and VK2SB/ZND/P, Belrose, distance 59 km. Horn antennae used with RK549 klystrons and 1N23E receive mixers in a duplexer system. Signals 5 x 9.

Interference to radio control model aircraft from CB, etc., reported. Luckily the aircraft were shifted to 29.7 to 30 MHz when CB became legal!

JULY 1974

New Zealand calling frequencies 52.2, 144.2, 432.2, 1296.2

Mention of net operation being touchy subject with some people, but nets being formed nevertheless.

Large list of contacts on 6 metres made by VK2ZRH from 1-4 to 14-4-74, a period away from the usual Es time, and covers contacts to VK4, 5, 6 and 7, JA2, 3, 4, 5, 6 and 9, video on 49.75, etc.

Roger VK2ZTB said the JAs worked in Sydney on 13-4 were the first recorded instance of Class 2 (night time) TEP in the Sydney area, and as VK4EN was heard at the same time it seems Es extended the opening further south

Mention of a good crystal calibrator for 144 MHz in RSGB manual

The Dapto EME Group are currently testing RTTY equipment for possible EME contacts.

VK2ZQJ running high power on 52, 144 and 432 all on SSB, 60 watts on FM. Proposes running 250 watts into a pair of 3CX100A5s on 1296. Also noted that Rod uses a crystal set for b/c listening!

AUGUST 1974

Another excellent guide to tropospheric DX reprinted from Victorian VHFer.

Also the summer VHF Field Day is on the way with VK5LP on 52, 144, 432 and 576 MHz on AM, SSB and FM. Lowest output 20 watts — bet that 240 volt generator got a thrashing!

SEPTEMBER 1974

Mid-winter ES between VK2, 3, 4, 5 and 7 on 14-7. On 2-7 open between VK2, 5 and 7.

VK2AMW group have approval for A0, A1, F1 and F2 modes on the high power permit until April 1975

OCTOBER 1974

3D2CM custodian of 3D2AA beacon on 52.5 MHz. Also 3D2AZ active on 6 metres.

VK4RO indicates some increase in 2 metre activity in north Queensland.

VK5MM worked VK2 and VK7 on 6 metres during RD contest, via meteor scatter!

NOVEMBER 1974

Golden age of button pushers! Low end of 2 metres reaches low ebb as a result.

Ch. 0 gets the axe from VK3AQR in the Geelong Newsletter. Darryl cites the upper VHF only TV system plus UHF as being more satisfactory than the present 13 channel VHF system. We all wish those in power had shown wisdom.

The migration of Z calls to HF on obtaining full calls gets a mention.

35 stations operating on Ch. 50 in Townsville area.

The demise of Victorian VHFer and Sydney's "6 UP" looks troubled.

DECEMBER 1974

JA1IGY goes QRT for the last time. Albany beacon on 2m gets moved to Mt. Adelaide (name QTH as WRE beacons on 135.5 and 1.6 GHz).

HL9WI works into northern VK on 19-10.

VK3ZAZ hopes to operate from Norfolk Island, but believed did not eventuate.

Some more on DX operating and those AM stations again! With the emergence of the FT620 plus FTV650s and other transverters around the 74-75 season, probably represented the last major stand of AM. Next season you could count the AM stations easily on one hand!

JANUARY 1975

P29GA beacon off air.

Es season providing all VK States, ZL and P29 to all areas.

Co-channel interference between Ch. 1, Mt. William and Mt. Dandenong.

Details of VK5SUs contacts on 2 metres tropo to three States from Ceduna — all in one day to VK3, 5 and 6.

Around 20-10-74 HL9WI worked VK4RO, VK4GS, VK4AAL and VK4ZRG on 6. VK4ZIM now VK4AAL, and Rod VK2ZQJ becomes VK2BQJ.

A large spree on the effect Ch. 5A will have on 2 metre activity.

FEBRUARY 1975

No VHF notes, can't remember why, perhaps the Editor and I were not speaking to one another at the time!

MARCH 1975

Where do you start? 3D2AA heard by VK7JV, VK7ZAH on 24-11-74. On 16-12 JAs to VK4ZJB. 27-12 VK7ZAH heard 3D2AA and worked VK2BKE on Lord Howe Is., and VK5ZMJ also worked VK2BKE.

2 metres and Ceduna when VK5SU worked VK2ZAY on 21-12 by Es, also worked VK2ZCV, VK2ATI and VK2YBZ, heard VK4ZJB. During same opening VK5ZMJ at Pt. Pirie worked 22 stations on 2 metres from VK2 and VK4 using SSB.

23-12 VK5SU to VK2ZRH on 2. On 16-12-74 VK5LP and VK5ZDY worked VK7ZDA on 2.

29-12 VK6ZCN and VK6ZFY heard VK5VF 2 metre beacon from Perth!

21-12 many many stations working VK3, 5 to VK2, 4 on 2m FM. Es the best seen on 2 metres since early sixties.

VHF Field Day plagued with 50 knot winds in VK3 and 5 . . . VK5LP virtually blown off Myponga Hill, covered with salt spray from sea seven miles away!

VK5MC and EME on 144 MHz, possibly first SSB EME out of Australia worked W8KPY on 30-11-74. Dapto EME group in trouble with lightning strike and solid state control gear.

432 MHz Australian record broken between VK6WG and VK3ZBJ, 2,440 km. Little did anyone know that the contact on 2-2-75 was unofficially the world record and stood for several years! All this happened during massive tropo conditions between VK3, 5 and 6 from 31-1 to 5-2-75.

Report that Andrew VK6ZCN going on 144 MHz EME, also Barry VK2ZAY looking for suitable receiver to start an EME station.

APRIL 1975

Much more on tropo opening January-February 1975.

EME: VK3AKC worked PA0SSB on 432 MHz, while Christ VK5MC worked K1WHS and K2RTH on 23-2 on 144.

Many operators heard WA6LET during special EME tests using 150 foot dish!

New Australian 2304 MHz record between VK3ZHU, Mt. Cowley, and VK3ATY, Lake Mount, distance 130 miles, on 7-12-74.

VK5LP gets the Higginbotham award for 1974.

Bob VK6BE had 98 two metre contacts to VK3 and 5 during big tropo opening!

MAY 1975

Special beacons on 28 MHz, one being ZL2MHF.

VK2HZ reports hearing 3D2AA on 6-1-75. Also survey of 52 MHz FM activity in VK2 by VK2HZ, over eight years 239 VK2s worked, all different, over 95 per cent on net channels, both AM and FM.

VK3ASV reviews AM and FM net frequencies.

FMT4575 transistor with 1.5 dB noise figure on 432 MHz now $44 each after a price reduction. (Today an MRF901 which does about the same job costs $2.)

JUNE 1975

VK0MA and VK0GR beacons confirmed as being on 24 hours a day.

VK5ZAD reports on 2m FM activity in USA.

Complaints of QRM on EME contacts due to very high gain antennae picking up ordinary transmissions via the moon!

VK2AM reports on G-land 2m activity. Only 2 repeaters going to London area (backward or smart?). High activity there on UHF bands.

Four P29 stations in Port Moresby on 6 metres.

Letter of note from K5ZMS of SMIRK giving membership 744 in 46 US States and 13 countries. VK6ZDY first VK SMIRK station with No. 722.

VK5ZPW and VK5ZMK active on 2 metres from Barossa Valley during VK3 openings.

Plans to put Mt. William repeater on Ch. 7.

VK3ZAZ claims contact with 3D2AZ via Oscar.

JULY 1975

VK3ZAZ receives QSL for contact with VK2BKE, Lord Howe Island.

VK5LP taken to task by VK3AKN for asking why Mt. William had to change to Ch. 7.

George VK3ASV sends a list of repeaters showing 39 now in operation in VK.

Quote from QST, "A ham in Akrom (rather carelessly) announced his location at one of the large mall parking lots and that he would be back on the repeater after some shopping. Some thieves did some shopping in his absence, taking all ham equipment and the stero tape deck. A word to the wise, repeaters can be useful, in more ways than you might think."

AUGUST 1975

VK2AMW 1 kW linear for 432 EME now going.

VK4RAT going on Ch. 1 from Townsville.

Letter from JA1PLI says about 21 countries worked from Japan during Cycle 20!

Rod VK2BQJ makes rude comments on the 2½ element yagi on 6 at VK5LP QTH!

3.3 GHz record in New Zealand set at 238 miles, power 60 milliwatts!

SEPTEMBER 1975

Interest on 6 and 2 sprouting from YJ8.

VK1VP has comments to make on the VK3AKN letter on repeaters last month.

VK2ZNW (5ZWW) again going with meteor scatter to VK7ZGI and VK5KK, VK5ZPW several times on 6 meters.

OCTOBER 1975

Details of the former Darwin beacon (destroyed during cyclone Tracy) and its transponder. VK8CM and VK8DI only active 6 metre stations at time.

Some "fine" detail on the occurrence of meteor scatter and the velocities of meteors being greatest around 0600 local because of earth's orbital velocity being directed towards the zenith. (Meteor velocity mean value equals 70 km/s.)

NOVEMBER 1975

All ZL beacons relisted on some new frequencies including ZL2VHP 52.500 MHz for the first time.

Indications of a good number of stations in Brisbane active on 6 and 2 SSB.

EME: VK2AMW to W3CCX and F9FT on 432 on 9-8-75. VK2AMW contacts now total 6 to 4 countries.

VK5SV works VK3 on a number of occasions in September.

Report from SMIRK indicating what goes on on 50 MHz in the north even in the bottom of the cycle. Include VK4IK to KG6. No TEP in VK6 for 1975 on 6.

DECEMBER 1975

EME and VK5MC on 144 MHz — worked JA6DR on 1-9, W7CNK on 25-9, and W6PO, while on 29-9 K2RTH. VK2AMW on 432 to PA0SSB and F9FT on 7-9.

VK7EM to be active on ATV again this summer.

Tropo openings up and down the VK4 coast on 12-10, mostly FM contacts.

EDITOR'S NOTE:

A Decade in Review will be continued next month when Eric outlines highlights on VHF/UHF from 1976 until December 1979. The regular VHF/UHF column will include the latest happenings on VHF/UHF. ■

WHEN PURCHASING GOODS, SAY YOU SAW IT ADVERTISED IN **AR**

The WIA in VK2

It was seventy years in March since a group of "Wireless telegraph experimenters and enthusiasts" met to co-operate and improve their lot with the government of the day. From records to hand, the meeting was held on the 11th March, 1910, in the Hotel Australia, Sydney, and as a result of that meeting the Wireless Institute of Australia was born. Soon after groups were forming in other States.

The WIA was formed two years ahead of what is now the RSGB and four years before the ARRL.

In the early 20s the amateurs in the group drew up the Memorandum of Association of the Wireless Institute of Australia, New South Wales Division. In doing so it took over the effects and liabilities of the then unincorporated Club of the same name. Seven amateurs moved to form a Company on the 26th of May, 1922, and on the same day registered an Association of the above name as a limited company.

In the early 1930s differences arose between the professional and hobbyist within the Division and for some 18 months the hobbyists became the "New South Wales Amateur Transmitters". The professionals became the IRE (now the IREE), and the Division absorbed the hobbyists to again become the WIA NSW Division.

In 1939 permission was granted by the Radio Branch for Divisions to conduct broadcasts to inform their country members of happenings. Outbreak of war, however, stopped amateur activities and during this period the WIA was kept operational by the Federal Executive, who were located in Sydney.

At war's end amateur radio boomed with trained personnel from the Services coming into the ranks. The early 1950s saw many activities in the Division. Meetings at this stage were held at Science House in the city. A move was begun to establish a "Home for VK2WI" and a five acre property on what was then very much the edge of Sydney was purchased at Dural. Work commenced around 1953 and the building formally opened in 1957, after untold hours of work by members and friends. The property is the site of the Division's repeater and beacon HF broadcast facilities.

In 1954 the Amateur Service saw the introduction of a new class of licence, the Limited. This licence enabled those not proficient in morse telegraphy to participate in the wonderful hobby of Amateur Radio, thus swelling the ranks with many more operators aspiring for the "Full" ticket.

During the same period interest was shown in obtaining a city property for the Division and a Co-op. was formed. However, nothing came of this venture. The end of WW2 had left this country with enormous stocks of radio equipment, and the Division set up a disposal buying and selling section for its members. The operation of this section produced the money used to purchase the Atchison Street property in 1960. With surplus funds the hall and basement area were soon added. Since then considerable development has occurred in the area with several high-rise buildings nearby.

Many new clubs have been formed in Sydney to cater for the needs of amateurs, as the central location of the WIA is prohibitive to some.

The Division has for many years been heavily involved in education with personal classes. For almost twenty years the Correspondence Course has helped perhaps thousands both in Australia and overseas to join the amateur ranks. The Division pioneered the CW practice format and still conducts nightly on-air morse training. To supplement this HF session one of the Sydney clubs developed a continuous transmission VHF morse training facility which utilizes a microprocessor for programme control. To cater for training the younger members of our community the Youth Radio Scheme came into being during the 60s. With the explosion for knowledge during the mid-1970s the YRS expanded to become the Division's Education Service, who have since published several books to help intending amateurs with studies.

The Division has an active WICEN facility at the moment. Over the years it has had its ups and downs. The Amateur Radio Service has always been available in times of communication needs. This Division's WICEN has become recognised by our State's authorities as a trained, reliable reserve communication facility.

Amateur Radio is always changing, new modes, new equipment, but perhaps the area which technically altered Amateur Radio the most in recent times was the granting of permission in 1968 for VHF repeaters. VK2, considered at times by other States to be out of step, has always been in the middle of band planning (??) and utilization of more channels than most of the other areas put together. We cannot help it if they did not smooth off the hills when "they" made the place. (It's always "they" who did it.) Also in 1968 the Division hosted, during the Federal Convention held at Atchison Street, the formation of the Region 3 section of the IARU.

A WIRELESS ENTHUSIASTS' INSTITUTE.

THE GOVERNMENT AND LICENSES.

"THREE GUINEAS FOR THE USE OF THE AIR."

Wireless telegraphy experimenters and enthusiasts are beginning to co-operate, and a number met last afternoon in the Hotel Australia in order to take the preliminary steps towards forming an institution. Vigorous comment was made upon the Government's action in regard to experimental licenses, and it was plain that besides a feeling for mutual help and interest, the restrictions alleged had had a large share in hurrying on the movement. Two ladies were among those present.

Mr. G. A. Taylor, who was elected chairman, explained the object of the meeting, and touched on the wonderful future ahead of the movement. "It is wise," he said, "to put our heads together and profit by each other's discoveries. Experimenters did not think the authorities were giving them fair encouragement. Every experimenter was at the beck and call of the military, naval, and postal authorities, and was allowed no legal redress if departmental officers thought he was breaking the rules. Mr. Taylor proposed the formation of an institution amongst experimenters and enthusiasts in wireless, for their mutual benefit. The object of founding the institution was to obtain justice, he explained; it would not be founded in opposition to any Government institution or department.

Mr. W. H. Hannam, seconding the motion, repeated the account of his attempts to obtain a Government license, which were described in "The Daily Telegraph" last week. "I have had a great deal of trouble with three Postmaster-Generals," said he, "and haven't got my license yet. They're still quibbling. We have all been treated in the same way, but no one has said or done anything until lately. Seventeen months of my time have been wasted since I was ready to erect my plant. Why should we have to pay three guineas for the use of the air, so far as experiments are concerned? The aerial navigation experimenters are charged nothing." One regulation, he complained, penalised an experimenter if the chief electrical engineer of the Postmaster-General's Department should certify telegraphic communication had been interfered with by his wireless appliance used "or intended to be used"!

Mr. J. H. A. Pike also supported the motion, which was carried, and a provisional committee was appointed to arrange for the next meeting.

Later, a general meeting of those interested will be called, and officers elected. It is proposed to assist in the formation of, and perhaps affiliate with, similar organisations in other States. The provisional committee is as follows:—Messrs. J. H. A. Pike, W. H. Hannam, F. Bartholomew, W. H. Gosche, F. and H. Leverrier, F. A. Cleary, and A. Garnsey, Major Rosenthal, Captain Cox-Taylor, Dr. Brissenden, and the chairman. Mr. Hannam will act as hon. secretary pro tem. Besides these gentlemen, the Misses Perratt Hill, and Messrs. R. B. Armstrong and J. A. Henderson attended, and gave in their names as prospective members.

DAILY TELEGRAPH

12-3-1910

PRESENTED BY: JOE REED. VK2JR.

A copy of 12th March 1910 Daily Telegraph report outlining the feeling against licence fees for radio experimenters.

The 70s saw the introduction of the third class of amateur licence — the Novice — and VK2 quickly took the lead in numbers. Only now in ratio are other areas catching up. VK2 now has a little over one-third of the nation's amateur population. This number has expanded the QSL bureau from a few cards a week to a thousand plus a day. Expansion of the scale of the last few years means that we no longer know everybody and the Institute may appear to some to have become a little distant or impersonal. The last decade also saw the great expansion of interest in radio spectrum utilization by others, and the Division did what it could to knock on the doors of government to put the amateur case. And what of the 80s?

In my brief time within Amateur Radio and the WIA I am concerned by what little history we preserve. Next time you have a clean up, check all gear out. Is there some information which might be worth preserving? Is it of interest to the Federal Historian, your Division, the Museum of Arts and Sciences in Ultimo, your own museums or other government facilities for the preservation of our history?

I would welcome information or communication from amateurs and SWLs in VK2 who might help to fill some of the historical gaps. Any communications may be directed to me via the Divisional office at Crows Nest or their address, PO Box 123, St. Leonards 2065. (Interstate amateurs should contact their own Divisions or the Federal office if they have local information they would like to pass on.)

Tim Mills VK2ZTM.

(Editor's note: Tim was licensed in 1959 and joined the WIA a little before that time. He has since then almost continuously held one or more offices at Divisional and/or Federal level.) ■

The "Static Electricity" Syndrome

Whenever people come up against something which they do not thoroughly understand there tends to crop up a host of old wives' tales, superstitions, rituals and a mass of just plain garbage! Often among this welter of superstition and theorising we find a few rule of thumb practices where people do the right things for the wrong reasons and then when they get results they hail the theory instead of looking carefully at the rule of thumb actions.

Roy Hartkopf VK3AOH
34 Toolangi Road, Alphington 3078

The mass of folklore which has arisen over the subject of protecting semi-conductors — specially MOS (Metal Oxide Semi-conductor) devices is a case in point. According to some people one should hardly take them out of their original package! Among some of the more usual recommendations are grounded benches covered with foil, masses of conductive plastic foam all over the place, grounded people with metal straps, turn off all power before inserting or removing them, and shorting straps across all the runs of the circuit board. If one followed all the suggestions one wouldn't use semi-conductors at all!

Let us start with the big bogey, static electricity. Just how much trouble can it cause in practice? Most people have experienced the crackling sound, and possibly have even seen or felt the electrical discharges when they have been putting on or taking off a nylon shirt. Obviously in this case there is a lot of static electricity around — particularly in dry weather — and if one rubbed a MOS IC over the shirt under these conditions one would be asking for trouble. So clearly the wearing of nylon clothing is not calculated to make a MOS IC any happier, though the danger is far less than is often supposed. Wearing earth straps is all very well if one is working on a space project where a failure can be disastrous, but for all practical purposes it is hardly necessary. It is rather amusing that the MOS static electricity superstition assumes that the person working on the equipment is completely isolated from ground and everything else — one couldn't get static charges otherwise — while the people who write the booklets dealing with the dangers of electrical shock always assume that the person has an almost short circuit path to earth and that even touching a live mains terminal can be fatal. Really one can't have it both ways all the time. If you were so well isolated that you would be capable of zapping a MOS device with static electricity you would be able to touch the EHT terminal of a television set and never notice it. How often are you well isolated enough to be able to do that?

Apart from anything else most modern devices have inbuilt protection and in practice there is very little difference between MOS and normal semi-conductors. But even the older type MOS devices were handled by the writer for years, including early insulated gate FETS such as the 3N140, and often they were resoldered from one experimental board to another several times and were still as good as new.

But transistors and ICs do blow up and some people have so many failures with them that they have given up and gone back to "safe" and "reliable" valves which "will stand any kind of treatment". This is just as much a fallacy and old wives' tale as any of the others. So valves are capable of standing any abuse? Have you ever tried dropping them on the floor? But, the old-timer would protest, that is ridiculous. Nobody would do a silly thing like that. But the point is that valves, IN THEIR OWN WAY, are just as fragile as semi-conductors — perhaps even more so — but because we have got used to their limitations we accept these for granted.

In some ways transistors and ICs are much MORE robust than valves. You can drop them and throw them around and they won't notice it. They will often accept voltage variations better. Many linear ICs will work from five to twenty volts. Try putting twenty volts on the heater of a five volt valve! If you happen to splash water on an IC it won't worry. Try spilling your beer on a hot valve — specially a power output one!

Many high power valves and mercury rectifiers will be ruined unless the heater is brought to working voltage before HT is applied. And what happens to voltage stabiliser valves if one forgets to put in a limiting resistor? The fact is that valves are every bit as dicey and fragile as semi-conductors but their weaknesses are different. It is only when one persists in treating semi-conductors as though they were valves that the trouble begins. One has to learn the new rules of a new ball game.

The first rule in dealing with valves is that one never lets them drop on to the floor. In the same way the first rule with semi-conductors is that one never, BUT NEVER, puts an excessive reverse voltage on a base-emitter or diode junction. One can get transistors which will stand hundreds of volts on the collector and take amps of current. But in most cases a reverse base emitter voltage of less than five volts will blow it out like a light. To expect a high power transistor to stand this treatment is as silly as expecting a high power valve to survive a drop on the floor.

The second rule with semi-conductors is to ground soldering irons and other equipment, NOT AGAINST STATIC ELECTRICITY, BUT AGAINST MAINS VOLTAGE LEAKS WITH APPRECIABLE CURRENT BEHIND THEM. If you want to see a practical example of this kind of thing put the probe of an oscilloscope or VTVM on to the body of a "low voltage" soldering iron — or even to a wire wrapped round the outside of a power cord. The secondary voltage of the iron may only be three or four volts (the peak of this, by the way, could blow up a reverse base emitter junction!), but the voltage from the secondary could be up to 90 per cent of the mains voltage. The only time I blew up a board of ICs (they were TTL, not even MOS) was when I had to try to do an emergency repairs at a work bench where the Scope iron was not properly grounded.

The third rule, and perhaps the most important for those who are changing over to semi-conductors, is that the most dangerous things one can do is to mix valve and semi-conductor equipment. It is more dangerous to the semi-conductors than the proverbial mixing of drinks is to the automobile driver! In the first place the mains equipment may be earthed (sometimes) or it may not. If it isn't you can be sure that hundreds of volts of capacitively leaked AC will be floating round. If it is earthed and runs from a different supply there may be high and dangerous ground loop currents. The heater voltage is 6.3 volts RMS with lots of amps. Five volts reverse will blow a transistor sky high. Finally when the valve equipment is switched on — and also when it is switched OFF — any semi-conductor equipment nearby can receive a belt of several hundred volts, positive or negative, with amps of current (instantaneously) behind it. Considering it only takes a microsecond to blow a semi-conductor, this could wreck the most rugged and well protected device. You might as well connect it directly across the mains!

All of these things, when one really understands the habits of semi-conductors, will be avoided, just as the valve buff wouldn't think of letting his expensive power valves roll off the bench. If either happens you should expect what you get! But if you remember that with semi-conductors you are playing a new ball game, that in some ways they are more rugged than valves, BUT THAT THE RULES ARE COMPLETELY DIFFERENT, then you will find they are just as reliable and predictable, perhaps even more so, than any other electronic equipment. ■

Putting up a TH3JR

W. J. Brown VK3BYD
45 Lahona Ave., East Bentleigh 3204

I had recently acquired a TH3JR second-hand and I decided to put it on a home brew 20 ft. 4 in. x 2 in. tilt-over tower. By placing a length of ¾ in. water pipe (having had since I put up my first antenna six years earlier) against the pole, I could rotate it with an Armstrong rotator.

The first thing I did was to put some guy wires on my mast to help take the weight. Then I took the water pipe off the roof of the garage but on the way down it slipped, dropped and of course, Mr. Murphy was there to help catch it — leaving me with a neat break next to the joiner which had made the two pieces one.

Next it was down to the local hardware to get antoher piece of pipe; a setback of around $9.

It arrived the next day and I set about getting the hardware together to hold the pipe and mast together. Again I went back to my local hardware for three "U" bolts. The piece of angle iron I was going to use to stop the pipe from sliding down was easily acquired from around the house (XYL hasn't noticed it missing from the bed yet) and last of all the rubber hose to put around the pipe to reduce friction removed from the washing machine (she did notice that was missing).

I started to put the mast and pipe together first. I put holes for the "U" bolts in the angle iron and earth lead, then the holes had to be put in the mast which was very much easier said than done. The holes had to be counter bore which was the main problem because the drill I had was an old 1 in. wood drill which was as sharp as a rubber tennis ball, but we battled on and finally got there.

With that all done I put the pipe and mast together, placed the pipe against the mast and tightened the "U" bolts. The mast was then pushed up and guys tightened to keep it out of the way when putting the antenna together.

All the elements and the boom of the TH3 were spread out on the ground and with some help from my 3-year-old niece, put together.

I then tilted over the mast and leant it on a ladder so it was about 6 ft. above ground, the same height as the antenna "U" bolts. I then shifted the antenna across (with it beaming straight down) to the mast. Mr. Murphy visited again and the boom was on the wrong side of the mast. To save taking it apart I decided to walk it around to the other side and, of course, I had to come the long way because the top of the pole was very close to a tree. In the process two trees were mutilated and some washing wrenched from the line (I had by then fixed the washing machine). When I finally got it into place I noticed that one side of the Director was just touching the garage making it impossible to get it in place so it was removed. I then manouevred it into place and connected the coax only to find half of the reflector and driven element in the tree. Upon my knees I asked for permission to remove a branch of the tree and after a barrage of saucepans and plates (she had not forgotten about the washing machine or the washing) I was told to take off only the smallest amount. I did this.

With all hands on the antenna, i.e. my sister holding a piece of rope to stop the antenna from swinging because it was lopsided with an element missing, my 3-year-old niece holding a piece of wire which was in no way connected to the antenna (clever girl that kid), XYL on a piece of rope which was being used to help support the mast and my brother-in-law helping me push the mast up from centre, the TH3 was ready to go up. When it was 8 feet up I replaced the missing element. At this stage my next door neighbour arrived home and made some comment about more space junk going up. With the element in place the antenna was pushed up to its final resting place. Guys were tightened and SWR checked. It tuned up very well with good SWR in each band.

One last comment about the TH3JR: it works very well as an antenna but it does not give much protection from the rain when you sleep under it. ■

Amateur Satellites

Bob Arnold VK3ZBB

COUNTDOWN No. 5

A further report from Pat Gowen G3IOR is reproduced below:—

By early February the Phase III project began to look like a satellite and, thanks to much hard work by the many dedicated volunteers, final integration was completed.

Earlier, a major snag had occurred with the flight-computer memory which, despite many weeks of intense investigation, refused to function reliably. A standby spare was used in the environmental testing, and the final unit will be integrated at a later date. The THIOKOL single kick motor will be installed at the last moment at the Kourou launch site in French Guiana.

The satellite successfully completed its Thermal-Vacuum testing on 11th February, when all the sub-systems were potted, and went to the NASA Wallops Island Flight Centre, where dynamic testing and weight-addition in order to achieve the correct spin-balance were completed. Following packing, the spacecraft then left by road for New York City, leaving by air the following day, to arrive at Frankfurt on 19th February. On 25th February it arrives at Tolouse for mating and test integration on 27th February, to be ready for the flight-readiness review on 19th March. The final terrestrial journey takes place on 9th April, when it goes to the ESA Kourou launch site, with the OSCAR team arriving later.

Originally expected to weigh some 75 kg AMSAT-OSCAR 3 will now approach 85 kg. ESA are aware of this heavier payload.

Launch is now set for the window between 1500-1800 UTC on 23rd May, and full coverage of the event will take place in real-time by a direct line commentary from the launch site to WA2LQQ, who will transmit from 1400 on until well into the post-launch period using 28.880 MHz. If propagation is poor, 21.280 MHz will be employed, and even 14.280 MHz, to ensure good coverage to Europe and Africa. WA6GFY will cover the Pacific areas and Japan, and W1AW will cover the USA and South America on one or more of their voice bulletin frequencies of 28.590, 21.390, 14.290, 7.290, or 3.990 MHz.

Due to the precedence of engineering tests and evaluation, the transponder will not be available until it is declared operational, and this will not occur until AO9 has completed a number of orbits following the kick-motor firing. Thus, it is regretted that none of the broadcasts planned for the H-3 General Bulletin channel during the transfer orbit will now be possible, as any transmissions in the passband could seriously jeopardize the whole mission. It is imperative that no potential users attempt to access the satellite transponder until actual operational service is declared. The general beacon will be giving out its regularly hourly updated information at 60 w.p.m. 170 Hz shift FSK Radio Teletype, and in A1 Morse Code, and in addition an HF bulletin service will be maintained to run from one week pre-launch up to three weeks into the post-launch period, giving short one-way transmissions every week-day from W2JT of the NJDXA as follows:

From 1800 to 1805 UTC beaming to Europe on 28.555 MHz; from 1805 to 1810 UTC beaming to Africa on 28.555 MHz; from 1815 to 1820 UTC beaming to Africa on 21.260 MHz; from 1820 to 1825 UTC beaming to Europe on 21.260 MHz; from 1830 to 1835 UTC beaming to Europe on 14.260 MHz; from 1835 to 1840 UTC beaming to Africa on 14.260 MHz.

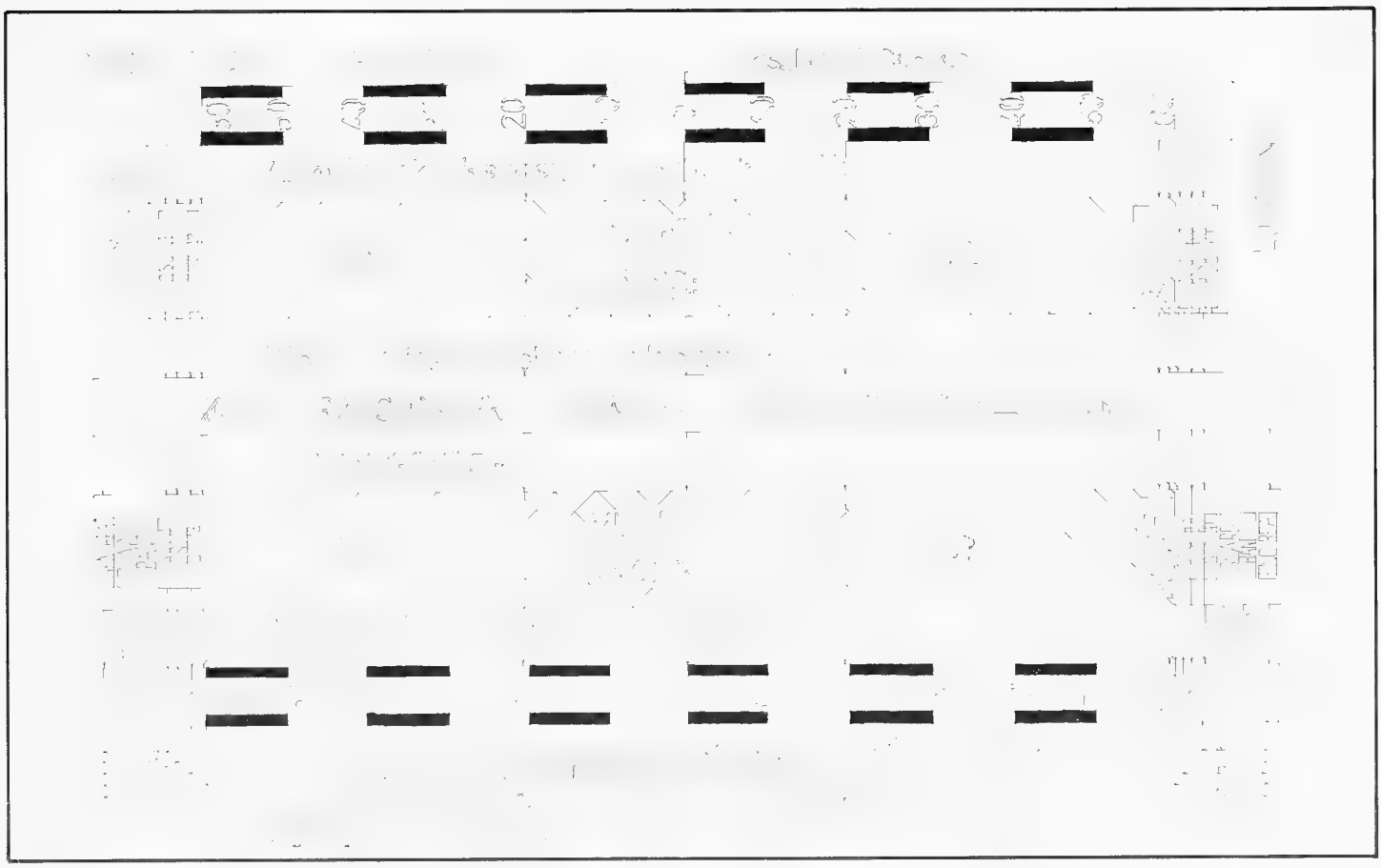


FIGURE 1: The AMSAT Phase III Bandplan.

WA6GFY will provide a similar service to cover Australasia, the South Pacific, Japan, etc.

Each bulletin will consist of a one minute call-up and announcement, followed by three minutes of bulletin, finishing with a one minute summary and sign-out. The broadcasts are subject to confirmation or modification at a later date.

A preliminary test of the beacons at room temperature showed the general beacon nominally on 145.8046 MHz and the engineering beacon on 145.9834. A further small change might occur following potting, and when in orbit.

The AMSAT Net and Calling Frequency (ACNF) on the H-4 channel is recommended as an emergency calling frequency also, as it would be continuously under monitoring by active personnel.

The 435 MHz uplink receiver now has an excellent noise factor, but once in operation in the transponder, it is apt to be degraded by computer and ion noise, probably to a working figure of some 4 dB, thus an input of up to between 500 and 1000W ERP RHCP may prove to be necessary for access.

The perigee of AO9 may now be between 1500 and 3000 km, and the kick-motor may well be fired within a period of only two and a half weeks of appearance in transfer orbit after launch.

Further information and more detail of the technicalities of the first Phase III satellite will appear in the pages of "Orbit" magazine, the first issue of which will appear this month. "Orbit" is posted free to all AMSAT members bi-monthly, and will carry news and articles on all forms of space communication with moon-bounce, meteor scatter, as well as topical matters on the current AMSAT-OSCAR satellites.

To date, 4,414 solar cells have been contributed to the AMSAT Phase III venture but the project so far has already cost in excess of $100,000, and this amount is expected to be at least $US150,000 by the time the travelling and shipping costs and the ground command controls are set up, etc., have been met when the satellite is in operational status by the end of June. AMSAT's budget is severely depleted, and financial assistance is desperately needed.

AMSAT are looking for volunteers living between 15°N and 15°S to take doppler measurements on the AMSAT-OSCAR 9 satellite whilst it is in the transfer orbit and to report these. Any potential helpers are asked to write to AMSAT at PO Box 27, Washington, DC, 20044 USA, or to call in on any of the AMSAT nets where full details will be provided on the means of measurement neded.

Errata . . . my apologies for an error in the AMSAT Phase III Countdown No. 4, which stated that "a 1.5 kHz 'ripple' from the spinning satellite to linearly polarized ground stations" would be effected. This should have read "a 1.5 *Hz* 'ripple' from the spinning satellite . . ."

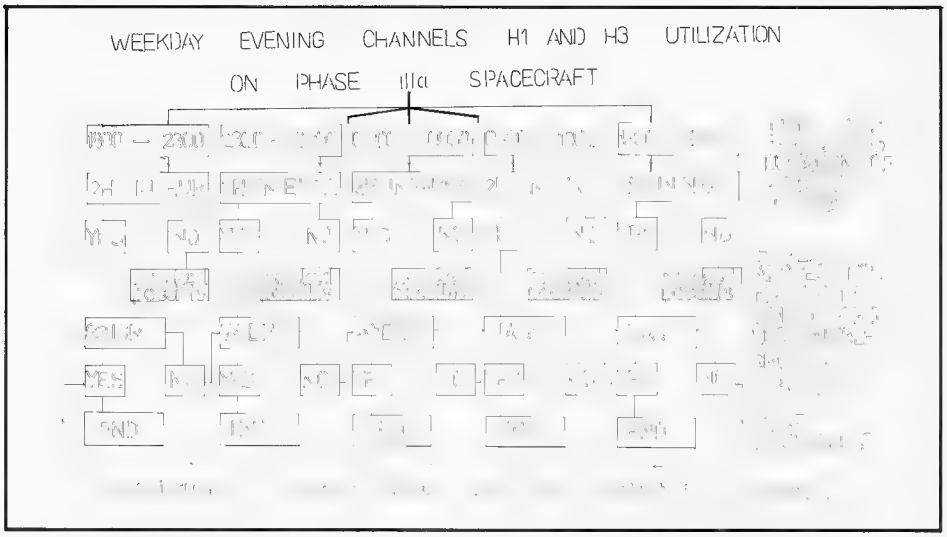
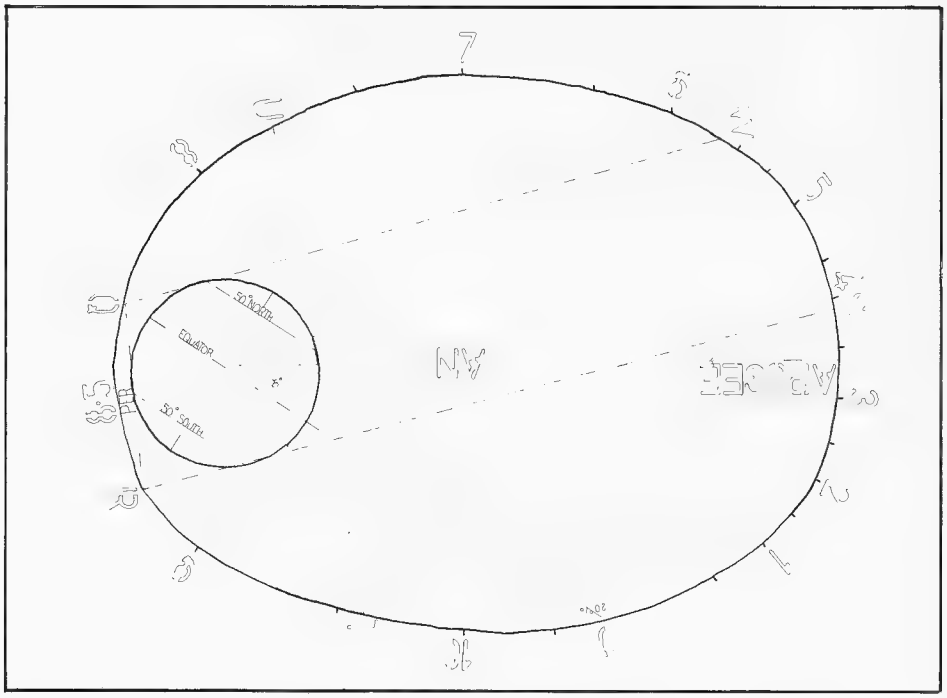


FIGURE 2 (above): Weekday evening channels H1 and H3 utilisation on Phase IIIa spacecraft.

FIGURE 3 (below): AMSAT OSCAR 9 access and coverage as seen from 50°N and 50°S at optimum and minimum apogee position relationships. Showing differences according to apogee emanation point. Based on initial 26°N apogee expected for first month of use in final orbit.



OSCAR DX?

Pat G3IOR tells me that in the last week of February he heard a VK4 (HS? MS?) working through OSCAR 8 during a pass at AN160. I have sent a SOS to Peter VK4PJ with hope that he can trace the station in question and validate the hearing.

Pat has also given some details of countries which may be worked through Phase IIIA (AO9), assuming it is in its predicted orbit parameters. He suggests it is possible to obtain WAC in one orbit and DXCC in ten orbits. Here is a selection of countries to whet your appetite.

Eqx	Time after Apogee	Areas in Sight
360	+ 10 hr	Antarctic, South & Central America, West Coast North America, Japan.
300	+ 11 hr	North and South America, All Pacific countries.
265	+ 1 hr	Most of Africa, all Asia except UA0.
225	+ 3 hr	Most of Asia and Europe.
230	+ 3 hr) + 4 hr)	Europe with short opening to U.K.

RUSSIAN SATELLITES

Information emanating from JA1ANG indicates that two new satellites are under test and could be launched later this year. These are to be designated RS0 and RS3. Beacon frequency for RS0 is believed to be 29.410 and for RS3 29.333, but these could change slightly after launch.

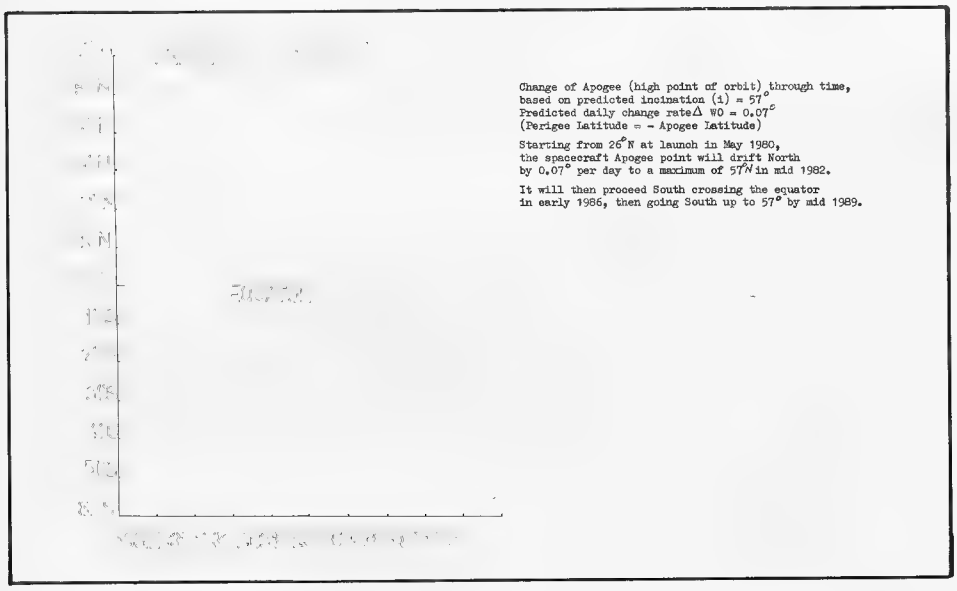


FIGURE 4: Change of apogee point of AMSAT OSCAR 9 with time.

NOTE: Phase III Countdown is edited by G3IOR, printed and dispatched by G2BVM and G3AAJ for AMSAT and is free to all publications and media, nets, bulletins for the radio amateur.

BAND PLANS

From time to time we experience severe interference via our satellites from ground stations, not only in VK and ZL, but also from USA on 29 MHz. These notes are probably only read by the converted but for those who are not familiar with satellite frequencies used at present, it would be appreciated if the following segments could be kept clear:—

29.30-29.5 MHz, 145.80-145.99 MHz, 432.125-432.175 MHz, 435.0-438.0 MHz, 1260-1270 MHz, 2400-2450 MHz, 5650-5670 MHz, 5830-5850 MHz, 10.45-10.50 GHz.

The WIAW teleprinter channels are also read by many operators and these should also be kept clear to assist reception. These are 14090, 21090, 28090.

PREDICTIONS

	Oscar 7	Oscar 8
Date 1 May 80		
Orbit No.	24972	10983
Eqx GMT	0020	0019
Eqx deg W	75	56
Date: 15 May 80		
Orbit No.	25148	11197
Eqx GMT	0130	0128
Eqx deg W	93	73

ACKNOWLEDGEMENTS

Thanks to VK3ACR and VK4PJ for assistance in compiling these notes. ■

Having trouble finding suitable speakers for your Club's Technical Meetings?

CALLING ALL COUNTRY AMATEUR RADIO CLUB PROGRAM ORGANISERS!

THE WIA LIBRARY OF TECHNICAL LECTURES MAY SOLVE YOUR PROBLEMS!

Most were recorded at the VK5 WIA Monthly Meetings SPECIFICALLY FOR COUNTRY AR CLUBS!

Subjects presently on Hand (Group C):

Wire Antennas	B & W	40 mins.
Radio Teletype	B & W	40 mins.
Tracking Oscar	B & W	30 mins.
The Apollo 13 Disaster	Colour	1 hr. 20 mins.
The Signal to Noise Story	Colour	45 mins.
Microcomputers	Colour	50 mins.
Microcomputers	Colour	10 mins.
Winning Foxhunts	Colour	45 mins.
Auxilliary Battery Charging	Colour	30 mins.
VK5RTV ATV Repeater	Colour	1 hr.

The average 60 min. Umatic Cassette and case weighs 850 gm. At this time the only formats for which this service is available is: ¾" Umatic — first choice, ½" Philips N1500 — second choice. Sorry, NO Betamax, VHS or N1700 etc.

For a full catalogue listing of WIA videotaped programs and a complete description of the services provided, refer to Jan. 1980 issue of Amateur Radio.

HOW TO ORDER

Send your request with blank ¾" Umatic cassette(s) **and sufficient stamps to cover postage from Adelaide to your town to:**

JOHN INGHAM
Federal Videotape Co-Ordinator
37 Second Avenue,
Sefton Park, S.A. 5083

More on the DJ4LB ATV Transmitter as a Basis for a 70 cm SSB Transverter

Murphy struck again in the April issue of Amateur Radio.

Budding ATVers, please take note of the following corrections.

FIGURE 2 (Page 16) —
Oscillator injection should be 404 MHz for 28 MHz IF.

FIGURE 3 (Page 16) —
The 2N5946 is shown in the wrong position. Where it is indicated to wrongly be, there should appear a coupling capacitor and the transistor located between two RF chokes — Capacitors C2, 3 and 6 are not shown in the diagram. Additional bypasses may be required around the mixer stage.

FIGURE 11 (Page 19) —
This is the layout for Figure 12.

FIGURE 10 (Page 19) —
This is a converter similar to the Microlink ATV Converter.

CHECK ALL OUTPUTS WITH WAVEMETER OR SIMILAR DEVICE BEFORE GOING TO AIR.

Ian Glanville VK3AQU and the staff of of Amateur Radio would sincerely like to thank Nev Darragh VK3YDR for the many hours of work devoted in aiding the presentation of this excellent article, not only in constructing various test units, but also in producing the photographs on this page. ■

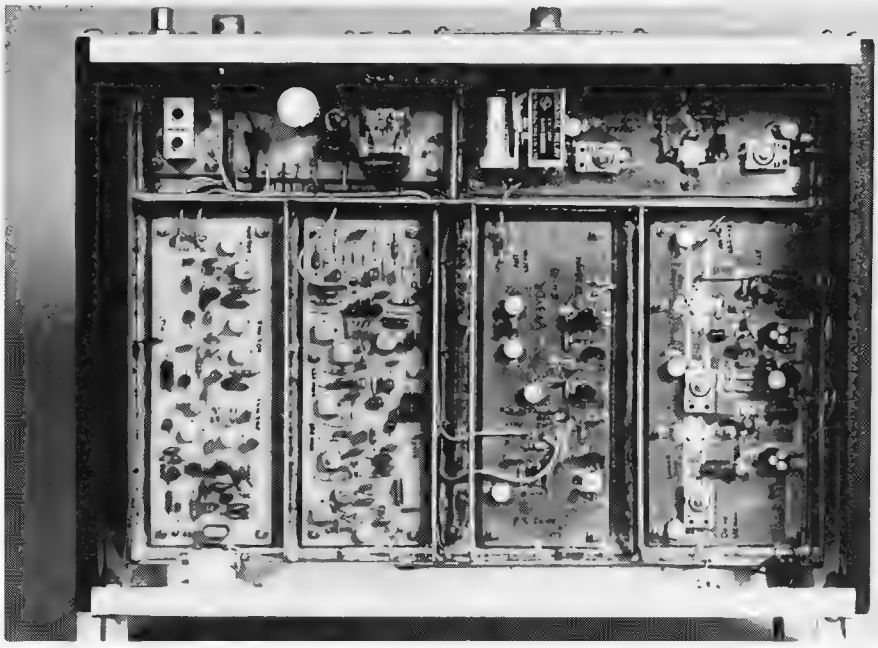


PHOTO 1:
Internal view of the 70 cm SSB transverter, showing streamlined layout and easy access to all components.

PHOTO 2:
Front view of the transverter.

YAESU

The radio.

NOW PRESENTS

ALL SOLID STATE

FT-707 "WAYFARER"

NEW BANDS FACTORY INSTALLED

SPECIFICATIONS

GENERAL

Frequency coverage:
80m 3.5-4.0 MHz, 40m 7.0-7.5 MHz, 30m 10.0-10.5 MHz, 20m 14.0-14.5 MHz, 17m 18.0-18.5 MHz, 15m 21.0-21.5 MHz, 12m 24.5-25.0 MHz, 10m 28.0-29.9 MHz.

Modes of operation:
LSB, USB, CW, and AM.

Power requirements:
13.5 volts DC, negative ground.

Current consumption:
DC 1.5 amps receive, DC 20 amps transmit.

Case size:
93(H) x 240(W) x 295(D) mm incl. heat sink.

Weight: Approx. 6.5 kg.

TRANSMITTER

Power input:
SSB/CW 240 watts DC, AM 80W DC.

Carrier suppression:
Better than 40 dB.

Unwanted sideband suppression:
Better than 50 dB at 14 MHz, 1 kHz mod.

Spurious emissions:
At least 50 dB down.

Frequency response:
350-2700 Hz (—6 dB).

Third order distortion products:
At least 31 dB down.

RECEIVER

Sensitivity:
SSB/CW 0.25 uV for 10 dB S/N, AM 1.0 uV for 10 dB S/N.

Selectivity:
SSB 2.4 kHz (—6 dB), 4.0 kHz (—60 dB); CW* 0.6 kHz (—6 dB), 1.2 kHz (—60 dB); CW** 350 Hz (—6 dB), 1.2 kHz (—60 dB); AM 3.6 kHz (—6 dB), 6.8 kHz (—60 dB).

Image rejection:
60 dB (80-12m), 50 dB (10m).

Audio output impedance:
4-16 ohms.

Audio output:
3 watts at 4 ohms at 10% THD.

Variable bandwidth control:
Continuous from 300 Hz to 2.4 kHz (SSB/CW modes only).
*with optional 600 Hz CW filter.
**with optional 350 Hz CW filter.

FEATURES

- Advanced receiver front end design provides the wide dynamic range required in demanding base station installations.
- LED level meter provides indication of the received signal strength, relative power output, and ALC voltage level.
- Continuously variable width of the IF passband.
- Digital plus analog frequency readout.

The optional FV-707DM Digital VFO provides up/down scanning in 10 Hz steps (so close together that you'll think you're using a regular analog VFO). Scanning control — up/down, fast/slow — may be exercised from the optional scanning microphone.

bail

ELECTRONIC SERVICES **Stan Roberts VK3BSR**

38 FAITHFUL STREET, WANGARATTA 3677

Telephone: (057) 21 6260. Telex: Teletra AA 56880

AUTHORISED DISTRIBUTORS:

VIC: Chirnside Electronics (03) 726 7353, G.F.S. Electronics (03) 873 3939, Imark (03) 329 5433. **NSW:** Emtronics (02) 398 6378. **QLD:** C. W. Electronics (07) 341 5377. **SA:** Graham Stallard (08) 43 7981, Farmers Radio (08) 293 2155. **WA:** Willis Electronics (09) 321 7609. **TAS:** J. D. Electronics (003) 44 5000.

Agents are located in many regional centres throughout Australia.

1ST. ANNUAL
STOCK TAKING SALE

PRICES SLASHED

STOCK TAKING CLEARANCE (SPECIALS ONLY)

Kenwood	TS120V	normally	$550	special	$ 529
Kenwood	TS120S	normally	$735	special	$ 689
Kenwood	DG-50 Readout	normally	$282	special	$ 255
Kenwood	AT-200	normally	$160	special	$ 150
Kenwood	SM220	normally	$360	special	$ 339
Kenwood	VFO520	normally	$164	special	$ 153
Kenwood	SP520	normally	$ 34	special	$ 30
Kenwood	TS520SE	normally	$720	special	$ 669
Kenwood	TRS2400 Hand held	normally	$345	special	$ 325
Kenwood	R1000 Receivers	normally	$498	special	$ 468
NDI HC100	2 metre 25 watt Transceiver	"	$399	special	$ 349
YAESU	FT101ZD	normally	$929	special	$ 889
YAESU	FT101Z	normally	$779	special	$ 739
YAESU	FT227RB	normally	$399	special	$ 369
ICOM	IC701	normally	$1199	special	$1099
ICOM	IC225S	normally	$299	special	$ 289
Commodore	8K Pet Computer	normally	$1499	special	$ 999
Macrotronics	M65 Rtty Interface	normally	$149	special	$ 135
Century 21	Receivers	normally	$329	special	$ 299

All Electronic toys and games less 30% to 40% make us an offer.
All the above available and in stock at time of going to publication – check (call in) for further items.
All specials have 30 day warranty
Price only available whilst existing stock lasts and prior to end of June stock taking. All Prices Ex Brisbane. Mail orders welcome.

MINICOMPUTER INCENTIVE OFFER
UNIQUE TO CW ELECTRONICS
With each Commodore 16K or 32K mini-computer purchased from CW Electronics by a licensed Amateur Radio Operator will come, at no extra cost, a MACRO-TRONICS M65 Ham Interface for Morse Code and RTTY (and ASCII) Transceiving.*
SAVE $149

SERVICE DIVISION

We have a fully equipped electronic service division. We can service enthusiast and commercial electronic gear efficiently and at a reasonable charge.
Wholesalers, agents, manufacturers and retailers please consider us for your next Queensland service contract.
CW can arrange service and service contracts of Commodore computers within Australia and PNG.
Telephone: (07) 341 5377 A.H.: (07) 341 4767

*Refer to license limitations on Morse and RTTY communications.

CW ELECTRONICS

CNR. MARSHALL RD AND CHAMBERLAND ST.,
TARRAGINDI – BRISBANE PH. (07) 48 6601
P.O. BOX 274, SUNNYBANK, QLD. 4109
AH: BRIAN (07) 341 4767 TELEX AA 40811

VK CW QRP

Jack Swiney VK6JS
59 Collova Way, Watheup, WA 6166

Undoubtedly, the top news item this month would have to be the high score that Phil VK6NDF has knocked up! Details are shown below on the scoreboard and this makes him the leader by several lengths. One of his QSOs with Mark VK3NOY in Preston was very interesting because Phil was running half a watt to give him 104.3 points for an individual contact. FB, Phil, keep it up. We will HAVE to pull up our socks, you guys, and give this fella a run for his money!

Okay . . . let's have a look at the scoreboard to date:

Phil VK6NDF: 521.6 (15m: 131.8, 10m. 389.8).

Gordon VK4AGW: 13.6 (80m: 5.5, 20m: 32.4, 15m: 96.7).

Jack VK6JS: 87.2 (80m: 4.0, 15m: 83.2).

Brian VK6NCU: 58.9 (15m: 25.4, 10m: 33.5).

HIGHEST SCORING INDIVIDUAL CONTACT TO DATE
Phil VK6NDF (QSO with VK3NOY): Rockingham Park, WA/Preston, Vic., with 0.5 watts, 104.3 points.

LONGEST DISTANCE COVERED, INDIVIDUAL CONTACT, TO DATE
As mentioned earlier, co-holders of this record are Gordon VK4AGW and Phil VK6NDF, established during a QSO with each other.

Thinking caps on? Question: Which two QTHs would make for the longest distance covered in VK? Let's know what you come up with.

Another two members have joined our ranks! An enquiry early last month from Jim VK2AKE has resulted in another QRP "battler". He tells us that his Ten-Tec Argonaut 509 does an excellent job and we wish him all the best on QRP CW. Watch out for Jims high scoring rate once he gets his two new 40 ft. dipole supports up and away. At that height his 80m calls are going to make quite a stir.

Eric VK3BXA is the other new recruit to the QRP gang.

As usually happens in the progress of all club-type activities, so it has now reached a point where we have formed a Club Committee.

President: Jack VK6JS.

Secretary: Phil VK6NDF.

Bulletin Editor: Jack VK6JS (once again!).

Any graphical illustration of an equation showing its variable parameters is always revealing and the formula we use to compute point scores is no exception. For a start we've shown below Points vs. Watts for five different distances in km to give us an insight into how operation within the rules would push up the scores!

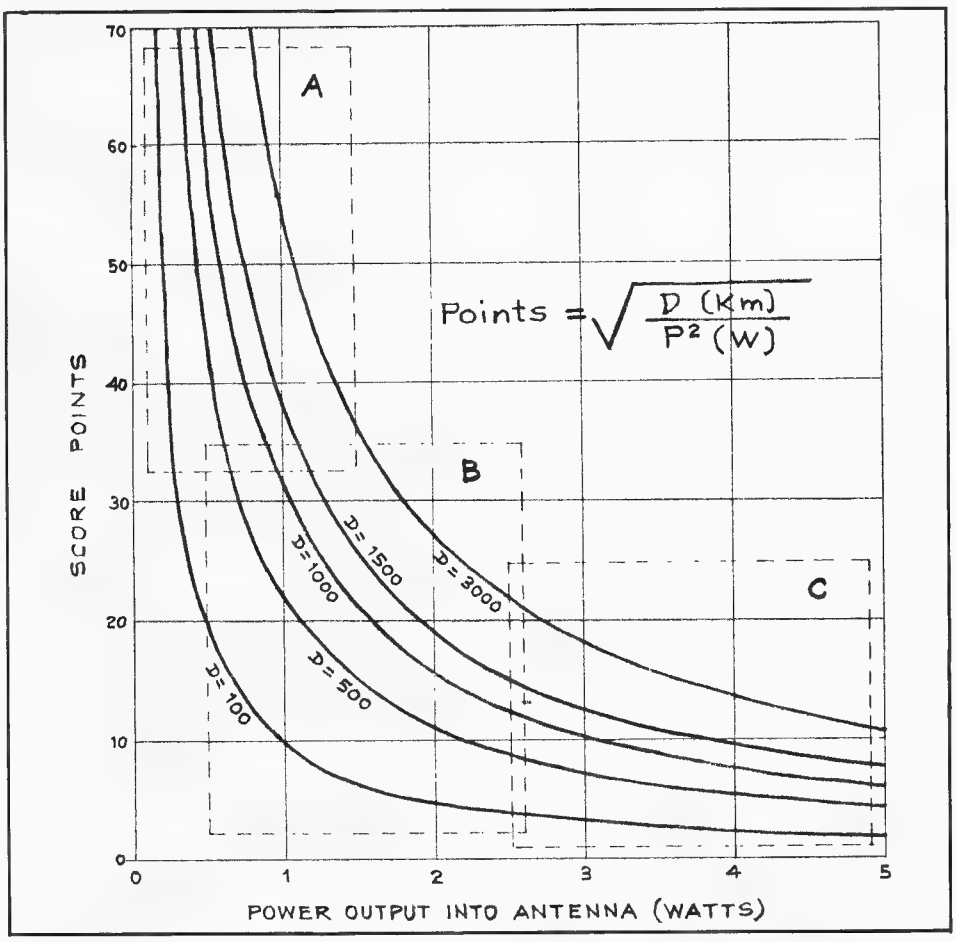


TABLE 1: A graph of power output vs. score points. Undoubtedly the highest score is proportional to the distance the linear is thrown away from the shack.

Areas A, B and C outline the obvious advantage of the **reduction** of power whenever possible consistent with band conditions. As an adjunct to the graph shown we hope to have a table of computer calculations next month by Phil VK6NDF giving precise distances between various points in VK.

A REMINDER! Please don't wait till you have made numerous QRP contacts . . . send in your log entries as frequently as possible. That way we can enter your score regularly for each month. Try and mail them to reach us before the start of the last week of each month.

And now that we have an official Club Secretary we request all Club members to mail their scoring logs direct to Phil VK6NDF.

Address them to: The Secretary, VK CW QRP Club, 20 Hercules Street, Rockingham Park, WA 6168.

That's all for this issue — readers' contributions on QRP activities are invited and can be sent to the VK CW QRP Club.

EDITOR'S NOTE:
For details on the VK CW QRP Club see page 20 May Amateur Radio. ■

AWARDS COLUMN

Bill Verrall VK5WV
7 Lilac Avenue, Flinders Park, SA 5025

THE BLUE LAKE AWARD
This award is offered by the South East Radio Group located in Mount Gambier, South Australia. The object is to create an interest between radio operators throughout the world and the south-east of South Australia.

The award is available to any amateur who:—

1. Establishes two-way communication with five (5) South East Radio Group members.

2. All amateur bands and modes are permitted. Crossband operation is not permitted.
3. No QSLs are required, only full log entry.

COST
$1.00 or 5 IRCs.

APPLICATIONS
Applications should be forwarded to:—

Awards Manager,
SERG,
PO Box 1103,
Mount Gambier, SA 5290.

Contacts made on or after 1st January, 1980, will be eligible for this award.

DESCRIPTION
The award measures 185 mm x 200 mm, printed on high quality white matt card with the illustration of the Blue Lake in light blue and all printing in red.

The introduction of this award is most timely to coincide with the SERG Convention which is held at Mount Gambier this month. I hope to see all the regulars there!

REDCLIFFE CITY AWARD
This award is issued to amateurs who contact members of the Redcliffe City Radio Club located in Queensland.

REQUIREMENTS
1. Australian and New Zealand amateurs require 6 points.
2. Overseas applicants require 4 points to qualify.
3. Any band, any mode. Crossband contacts are not permitted.
4. Contacts with the Club station VK4RC counts as 2 points.
5. Contacts with Club members count as 1 point.
6. Send log details only. QSLs are not required.

COST
I do not have these details but I suggest you include $1 or the equivalent in IRCs to cover postage.

APPLICATIONS
Applications should be forwarded to:—

Custodian,
Redcliffe City Radio Club,
PO Box 20, Woody Point, Qld. 4019,
Australia.

The Club station VK4RC goes "on air" each Sunday evening from 8.00 p.m. on various frequencies — presently on 21.175 MHz. From May to July the frequency is 3.610. When propagation is favourable the station may be found on 14.300.

DESCRIPTION
This award measures 210 mm x 170 mm, printed on high quality paper. The illustration and background are in blue and the award motif and printing in gold.

Good hunting. ■

BLUE LAKE AWARD
SOUTH EAST RADIO GROUP
The South East Radio Group has pleasure in granting this certificate
to .....
who has complied with the conditions under which this award is granted by contacting the required number of members.
Mode
Award No. Date
Awards Manager President
SERG: MOUNT GAMBIER, SOUTH AUSTRALIA
P.O. Box 1103, Mount Gambier. 5290

ABOVE: The Blue Lake Award issued by the SERG in Mt. Gambier; and BELOW: The Redcliffe City Award, another attractive piece of wallpaper.

TRY THIS

WITH THE TECHNICAL EDITORS

SIMPLE ELLIPTICALLY POLARISED ANTENNA

Elliptical polarisation is similar to circular polarisation but the horizontal and vertical components are not equal. In other words there is some difference in both the horizontal and the vertical planes.

Very often the crossed dipoles which we use with a phasing line will actually produce an elliptically polarised signal as we will not have exactly equal currents in each dipole.

A Russian design which makes no pretence of producing anything but elliptical polarisation does away with the quarter wave line. This produces a much simpler antenna which produces fairly close to circular polarisation. The elliptical polarisation achieved would appear to be practically the same as circular when used to make contacts.

The design appeared in the Russian magazine *Radio* for July 1979. The design uses two dipoles cut so that the terminal impedance of one is inductive and the other capacitive. In this manner the currents in each dipole can be made to differ by 90 degrees. The lengths used are 0.46 wavelength and 0.54 wavelength. These lengths are with respect to an 0.5 wavelength dipole and so would require further correction for end effect.

The dipoles are connected as in Fig. 1 and the equivalent circuit of the dipole feedpoints is shown in Fig. 2. The resultant impedance plot is shown in Fig. 3, which illustrates how the 90 degree phase difference is obtained.

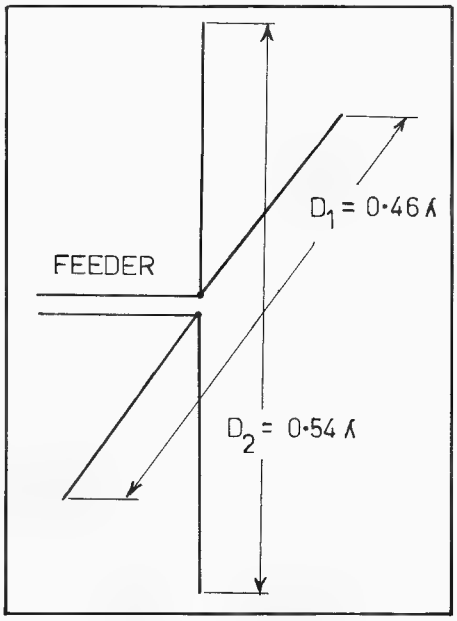


FIG. 1: Crossed dipoles connected for elliptical polarisation.

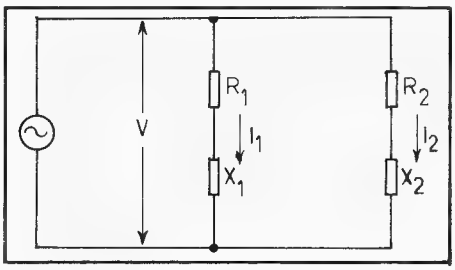


FIG. 2: Equivalent circuit of dipole feedpoints.

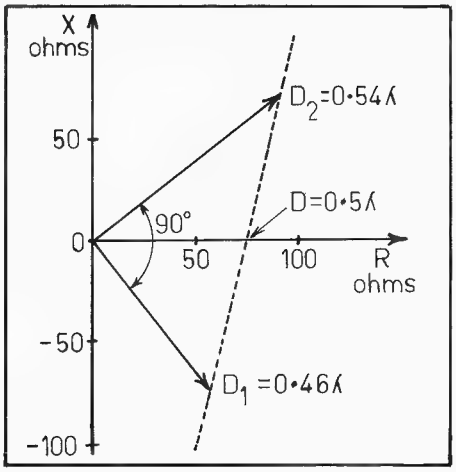


FIG. 3: Crossed dipole impedance plot.

From Fig. 3 it is also apparent how the currents in the dipoles will be of different magnitudes due to the different impedances. It is possible to calculate by how much they will differ and what degree of elliptical polarisation will result. Calculations in the article suggest that one component will be 0.85 of the other. This would not be very noticeable in practice.

The original article may be found in the magazine *Radio* for July 1979. However swot up on your technical Russian before rushing to obtain a copy. The author was K. Kharchenko.

VK3AUI. ■

AMATEUR SATELLITES APPENDIX

Bob Arnold VK3ZBB

There has been a sparsity of information on the future of OSCAR Phase IIIA, which will be known as AMSAT-OSCAR 9 after its launch on the 23rd May.

Several enthusiasts will be monitoring information obtained from AMSAT, ARRL and the satellite itself and this will be disseminated via the Australian and Japanese nets as outlined in the May edition of "AR".

Bill Magnusson VK3JT is co-ordinating the educational aspects of our satellites and has asked me to include the following notes:—

"OSCAR IN THE CLASSROOM"

Response has been encouraging so far to the recent article on the potential for educational uses of amateur satellites. I have received enquiries from VKs 1, 2, 3 and 5. The project is being advertised through various education department standing committees. Curriculum material is under preparation and I am in contact with the teachers' colleges to alert their students of the possibilities. I have had a number of enquiries for orbital data, frequencies, etc., for satellites other than the OSCARS, e.g. weather, landsat, etc. I have no knowledge of these but I believe that some amateurs are experimentally receiving and tracking such satellites. Can someone help with data? This would seem to be compatible with the OSCARS for senior study. All information or enquiries QTHR or Footscray Technical School." ■

GIVE AN AR ADVERTISER YOUR SUPPORT

QSP

"HMAS CASTLEMAINE", a former naval coastal minesweeper, has been given the distinct privilege of having the only R series call sign issued to a station and not a repeater. Mike Thorne VK3BKK and a host of dedicated workers are currently restoring the "Castlemaine", complete with radio room.

The new call sign VK3RAN can be heard in the future most Sunday mornings on 21.175 and when the radio room is completely restored amateurs will be welcome to view the result and/or operate equipment.

The whole venture has been sponsored by the Royal Naval Amateur Radio Society, whose numbers now exceed 120 members. The RNARS hold one net Monday evenings on 80 metres (3613 kHz), commencing at 1030 GMT (SSB), and on Tuesday evenings at 1030Z on 3527 kHz using CW. All are welcome to join in to the net.

As a matter of interest to readers, two other special call signs to look for are GB2RN, that of "HMS Belfast", and W4USN, special call sign for a former US aircraft carrier. ■

USA EXAMS

According to Ham Radio February 1980 Presstop the FCC in the USA has ruled that volunteer amateur examinations are illegal and must be terminated. Responsibility for novice exams had rested with the Amateur Service since June 1954. Another comment, from February 1980 QST, is that the status quo will continue for now but there could be a significant impact on the novice licensing programme in the not too distant future. ■

VHF-UHF
An expanding world

Eric Jamieson, VK5LP
Forreston, S.A. 5233

VHF/UHF BEACONS

Freq.	Call Sign	Location
50.005	H44HIR	Honiara
50.023	HH2PR	Haiti
50.025	6Y5RC	Jamaica
50.035	ZB2VHF	Gibraltar
50.036	HC1JX	Quito
50.038	FY7THF	French Guiana
50.040	WA6MHZ	San Diego
50.048	VE6ARC	Alberta
50.050	ZS3E	South West Africa
50.055	ZL1UHF	Auckland
50.060	PY2XB	Sao Paulo
50.070	YV5ZZ	Caracas
50.070	VP9WB	Bermuda
50.080	W1AW	Connecticut
50.080	TI2NA	Costa Rica
50.085	WA6JRA	Los Angeles
50.088	VE1SIX	New Brunswick
50 089	WD4CEI	North Carolina
50.100	KH6EQI	Pearl Harbour
50.104	K4EJQ	Tennessee
50.105	KC4AAD	McMurdo, Antarctica
50.110	KH0AB	Saipan
50.110	AL7C	Anchorage
50.120	4S7EA	Sri Lanka
50.144	KC6IN	Ponape, Caroline Is.
50.498	5B4CY	Cyprus
51.999	YJ8PV	New Hebrides
52.200	VK8VF	Darwin
52.250	ZL2VHM	Palmerston North
52.300	VK6RTV	Perth
52.350	VK6RTU	Kalgoorlie
52 400	VK7RNT	Launceston
52.440	VK4RTL	Townsville
52 450	VK2WI	Sydney
52.500	JA2IGY	Mie
52.500	ZL2VHM	Palmerston North
52.510	ZL2MHF	Mt. Climie
52.800	VK6RTW	Albany
52.900	VK6RTT	Carnarvon
53.000	VK5VF	Mt. Lofty
144.010	VK2WI	Sydney
144.162	VK3RGI	Gippsland
144.400	VK4RTT	Mt. Mowbullan
144.475	VK1RTA	Canberra
144.500	VK6RTW	Albany
144.600	VK6RTT	Carnarvon
144.700	VK3RTG	Vermont
144.800	VK5VF	Mt. Lofty
144.900	VK2RTX	Ulverstone
145.000	VK6RTV	Perth
147.400	VK2RCW	Sydney
432.400	VK4RBB	Brisbane

CHRISTMAS ISLAND DX

Steve VK3OT, who operated on Christmas Island for a fortnight in March as VK9XT, certainly didn't sit around doing nothing! His note to me indicates working 11 countries and approximately 1700 JAs on 6 metres integrated with some 12,500 QSOs on 10 through 80 metres!

Best DX was JA8 at 4500 miles and H44 3800 miles. Backscatter via evening TEP path to VK4RO, VK4ZBJ, VK4JH, VK8GE and VK6OX. Direct down east range QSOs with P29ZFS, H44PT, H44DX, VK8GB, VK8VV and VK8ZBW. Other DX included 4 or 5 openings to KG6, YB1 on 2 or 3 occasions, their 52 MHz allocation is 52.120; then DU1GF, K9PNT/DU2, HS1BG, JD1AKE, HL9TX. All five VS6 stations appear to be operating. Every JA call area and prefecture including Okinawa.

Other signals heard included FM repeaters using 1 MHz offset, one occupies 52.000, another 53.500. TV on 52.400 very strong.

Craig VK9XW has ordered an IC551D for use on 6 metres and Steve left behind the 4 element beam for that purpose. Steps are being pursued to activate the VK9XI beacon, probably on 52.390 in accordance with VHFAC bandplan. Thanks for writing, Steve, and placing those very fine stamps on the envelope!

NEWS FROM NORTHAM

Tony VK6BV writes to say he had to wait until 28-1 to work VK5, being the first DX for him. Openings to Japan started on 17-2 and continued on 19-2, 20-2, 21-2, 22-2, 25-2, 26-2, 8-3, 13-3, 15-3, 17-3, 18-3, 19-3, 20-3, 23-3, 27-3, 28-3 and 29-3.

"With most of the JA openings they would start off with JA8 and sometimes JA7. After an hour or so band would close for various lengths of time. On re-opening it would be to the more southern call areas of Japan. As a rule signals peaked to S9 on most openings. Night time openings around 1000Z have been relatively weak and very fluttery, more so than last year. Another point which may be worth noting is the way the MUF has risen and fallen. While listening on the PRC10 the MUF may have reached 43 MHz. On listening again some five minutes later the MUF will have risen to 52 MHz and above. Another fascinating point is the sharp frequency cut-off. Don VK6HK also made note of this fact when he was listening to the 49.750 video carrier sidebands, the upper sidebands would cut off before the lower sidebands. To make the point clearer, after contacting a Japanese station on 52.050 I asked him to QSY to 52.075. Both moved up, called, no reply. Went down to 050 again and repeated request, again called on 075 and still no reply. Went down to 050 again and completed contact. The JA told me he was unable to copy on 075 although I was 5 x 9 on 050. You work it out!

"Listening short path to Europe the band MUF rose to 41.500 on many occasions between 1000 and 1300Z. On 16-2 audio was S9 and video at 45.000 very strong between 1210 and 1235. Next was on 7-3 when TV audio and video was again strong between 0945 and 1100Z up to 45 MHz. On 8-3 band really opened when MUF rose to 51.750 between 0945 and 1010Z but quickly dropped to below 45 MHz, and by time contact was established between G3JPC and VK6WD and VK6HK the band was on its way down and no crossband contact resulted." Thanks, Tony.

FURTHER WEST

Garry VK5AS at Cowell, about 130 miles north-west of Adelaide and on Eyre Peninsula has been having a "ball" updating equipment. His latest band is 432 MHz from a microwave modules transverter to an 88 element antenna, so all you 432 buffs in western Victoria had better make a note of this!

On 2-3-80 52 MHz VK1, VK2; 4-3 144 MHz VK3ANQ, VK3AOS; 9-3 52 MHz JA1, 2, 3, 4, 5, 6, 7, 9 and 0; 14-3 144 MHz VK3AOS; 15-3 52 MHz VK4ZJB, 144 VK3ZHP and VK2BY; 16-3 144 MHz VK2ADZ, VK2DGW, VK2DAB, VK3BFY, VK3CI, VK3BKF, VK3ZHP, VK3AXV, VK3YLV, VK3ATN, VK3YQX, K3BHS, VK3AOS, VK3AQR, VK3ANQ, VK3YNV.

After that effort on 15-3 we can now surely feel there has been a renewal of 2 metre activity from over the border, and with the operation of several strategically placed stations in VK5, namely VK5CK at Piccadilly, VK5SV at Wasleys, VK5KK Arthurton and VK5AS at Cowell, plus VK5RO in Adelaide, we can now offer a range of contacts over considerable distances to operators from other States. Of course those of us in the poorer areas, like VK5LP, and generally speaking many of the other boys in the Adelaide area, have to sit on the sidelines and hear one side of the activity!

VK4 DISTANCE RECORD

Word has come to hand from the VHFAC advising confirmation of the claim for a new VK4 distance record between VK4ZEZ/VK4NFR and N6CT on 2-3-79 on 52 MHz for a distance of 11,857.3 km or 7,367.8 miles. Congratulations to Ed for this contact, and with luck you may be able to increase that distance in the near future.

ROUND UP OF SIX METRE NEWS

John VK5ZBU reports hearing W7KMA beacon 51.973 at 0000Z and 0226Z on 1-4, very weak and watery! Same day appears Bill ZL2CD worked 17 stations in W5, W6 and W7, open from 2100Z but not to VK areas. Dick VK5ARZ reports reception of 5B4CY beacon S1-2 0915Z; VK6OX heard same beacon from 0900Z.

Keith VK5SV reports the W7KMA beacon uses old OMEGA gear and runs about 30 watts to a half-wave dipole, but hopes to attach it to a 3 element yagi in due course! On 13-3 VK6WD worked KG6DX on an otherwise dead band (?) and KH6IAA heard the VK4RTL beacon. On 2-4 G5KW said to be copying ZS6 at 0945Z on 50 MHz . . . 3-4 W7 copying ZL4OY 2329Z 50.109.

3-4: **VE1ASJ worked ZL2CD, distance 15,213 km, which is probably a new Canadian-New Zealand 6 metre record. If you hear VE1ASJ phone (506) 847 5656.** 4-4: H44PT worked FY7AS. Peter H44PT will be off air from 1-6 to some time in August. KP4CL and KP4CK work JAs 1430Z. ZS6 working G 50 to 28 MHz.

On 3-4 again ZS5LN to G5KW about 1130Z, also to D1DH, DK1PZ 50.050 CW and SSB to 28 MHz. ZS6PW also working Europe. ZS6LN running 10 watts worked ZS5TR 8 watts, both using 8 element KLM antennae and FT620 barefoot. VK TV being heard by ZS6LN. Also a report of ZS6LN being copied by a station in Athens on 2 metres, but no confirmation of this.

5-4: **ZS6LN worked EI6AS on 50.100 CW and SSB at 1104Z, this being a two-way contact on 6 metres!** EI2W and EI9D are also on 6 metres. KH6EQI beacon reported operating again by VK6WD. H44PT working ZB2BL on 10 metres at 1209Z, trying for 6 metres. Report again of contacts between SV1AB and SV1DH in Athens and ZS6 on 2 metres, while on 4-4 ZS6LN worked ZE5JJ in Rhodesia on 432 MHz.

6-4: ZL to W on 6 metres; 7-4 KG6DX to VK2 and VK4 on 6m with contacts which actually started on 28885. Also to VK5ZK, 2345Z S2-4, and to VK5RO and VK5KK all on CW. JA on 52.050 1248Z S1-3 talking to VK4GI. Lonely contact between JA1PLI and Jim VK5ZMJ 1310Z on 7-4.

10-4: Joe VK4JH reported hearing KH6 regularly, also JAs. He had worked three Okinawa stations, plus KG6KG/KH3 and KG6JIQ/KH0. Same day ZL to XE1GE 2100Z. VK2BYX had half a contact with XE1GE! VK5KK and VK5AS copied the XE station on 50.005, but not audible on 52.005. KH6IAA worked YJ8PD.

11-4: Solar count 247, A index 22, K index 3. **C6ACY Bahamas transmitting 50.101 to ZL,** then at 2114Z XE1GE appeared on the band and worked ZL4LT, then ZL2CD at 2115, VK5RO at 2130, then contacts with VK5AS, VK5KK, VK5ZDR, VK5ARZ, VK5ZK, VK5LP (2241Z), VK5ZBU, VK5SV, ZL3NE, VK3AWY and heard VK7RO on CW. All this took place on a very awkward split frequency set-up. XE1GE transmitted on 50.094 and received on 52.004, so those stations without separate receivers or VFOs had to do much switching and dial tuning to make the contacts, but it was done. It seems likely the contact between VK5AS and XE1GE could be a new Australian record for 6 metres. The signals from Mexico were peaking to S9 with an average of S5-6 and he was there for about 1½ hours.

Subsequently learnt from Geoff XE1GE that the band had been open to VK on 8-4, 9-4 and 10-4. ZLs were heard calling W5, and reports of several ZLs working C6ACY in the Bahamas. ZS6LN copying KH6EQI at 0430Z, ZLs working W4, W5 and W6 and JA. ZL TV extremely strong in Adelaide 2200Z.

On 12-4 VK2ZZV reported hearing KP4 about 2230Z but one way only. KH6EQI at 0000Z for short period. At 0400Z VK5RO got stuck into the JAs on CW on 52.010, followed by VK5KL and VK5ZK. JAs to S9 on 50 MHz only.

13-4: Large and long opening to Japan from about 0400Z, mainly JA7 and JA8 with signals well over S9 into VK5, VK3 and VK2 at least. XE1GE heard again working ZL. On 14-4 XE1GE again into VK5 and to VK3AMK at 2340Z, others to work him were VK5RO, VK5ZK, VK5LP and we tried valiantly to get VK5AMK to work him. XE1GE hearing VK1VP and worked VK7JG at 2353Z, also

sa'd to have worked VK3AUI and VK3AWY. Still there at 0020Z. On 15-4 XE1GE appeared again around 2300Z but much weaker. Interesting to note the absence of any signals from W during these periods of extensive openings to Mexico.

At this point I am now handing over to John VK5ZBU to finish the column this month, as I will be flying out to New Zealand on 19-4 for a break of a month, and where I hope to catch up with some of the VHF gang as time permits. Over to you, John, and many thanks.

With Eric making contacts the easy way, "eyeball wise" in ZL, we will continue the story of a somewhat dismal April.

Despite the prophetic comments following the events of last April, we in VK5 and seemingly other southern areas of Australia have not enjoyed the same exciting contacts, but other areas have had vastly different and more satisfying results.

April 16: 1140 GMT KH6EQI was heard in VK5 for half an hour. Some JAs on 50 MHz, also on 52 MHz, with KG6DX very strong on 50 MHz.

April 17, 18 very quiet, with Suzy JA8HWL being the strongest signal on 50 MHz. No signals on 52.

April 19: 0130 GMT stations heard or worked were 2ZZV, 2ZQX, 4AMF, 4ZAZ and 4LR.

April 20: The most interesting happening was some two hours of very excellent signals between ZS and KH6 (more of this later).

April 21: 3D2DB and N6CT heard in VK5, no contacts.

April 22: A la'e opening at 1330 GMT with JA1MRS, JE2LRW, JA2DDN and JF2TLR on 52 MHz for half an hour.

April 23: Although the KH6 beacon was heard in VK3, nothing of note was recorded in Adelaide. While VK6 and VK4 were working JA nothing was heard in VK5 until 1420 GMT when Nori JA1VC and Mic JA1MRS were worked, Mic for the third time in a week.

April 24, 25, 26, 27 and 28 were times to ponder on what did not happen, no activity and in general a case of "Never have so many expected so much and received so little".

A ZBU definition of a sunspot cycle: "A period when man's imagination is directly proportional to sunspot activity and fiction becomes stronger than truth."

OBSERVATIONS

Following countless hours of observing and trying to come to a reasonable conclusion regarding some of the more unusual and interesting contacts noted during this period of solar activity and having noted the spate of pseudo-scientific explanations that have been circulating, one is left with a feeling of doubt about what has been happening, certainly a vivid imagination is a requisite. Imagine, if you can, a little 6 watt signal all dressed up in top hat, white tie and tails doing a Fred Astaire routine across some thousands of miles from ZS6 to finally take a bow in KH6!!! As Pygmalion once said, "Not b . . . . . likely!" Now! Let's take the same signal and direct it (minus the tails, etc.) into a wave-guide-like ionised gaseous vasiform or tubular duct and, hey presto, the story becomes believable, the same may be applied to most of the long distance contacts between VK and XE, JA to LU, ZS to Europe and KG6 to LU, to mention but some. The stability and strength of the signals are different to other modes of propagation as study will show, but much of the necessary black magic is removed.

The orientation of these ducts determines what the path will be usually, it appears that they are trans-equatorial (magnetic) in character and vary in dimensions.

These ducts occur during periods of mounting ionospheric upheaval and also during the decline of ionospheric disturbances until a point where a state of normalcy is reached. The origin may relate to equatorial plasma bubbles, such has been considered, whatever the relationship if any, the involvement of ionised gases with the earth's magnetic field during geomagnetic storms at times of high solar activity would appear to create the ducts which may persist for minutes or even hours before collapsing.

Space does not permit elaboration of all supportive evidence, but suffice to say a study of propagation reports and comparison with events will show a distinct relationship. Ducts have been quite accepted on 2 metre paths, but ionospheric ducts have been rather neglected, hence the study of long distance paths. The unusual and confusing beam headings, the slewing of signals and the strange angles involved, such as the KG6 signals beaming to KH6 and at the same time reaching LU, all of these become more readily understood and much more plausible when ducting in association with other forms of propagation are considered.

And now to conclude with yet another 5LP thought for the month: **"It's not what you stand for that makes life difficult, but what you fall for!!"**

Late news-flash: Anthony Green VS6EZ has written asking that all amateurs note the change in frequency allocation for Hong Kong. VS amateurs may now operate between the following frequencies: from 52.022.5 continuous to 52.110 MHz. The VS6EZ main frequency will still be 52.100.

"It's great stuff, that Sporadic E! If I knew who the agents were I'd buy a bottle!"

Good ducting and 73.

John. ■

DIVISIONAL NOTES

VK2

Pictured are members of the Goulburn Amateur Radio Society partaking in sunshine at the annual convention last October held at Young. The next South West Convention will be held at Griffith in November — more details will appear in a later edition of Amateur Radio. Nonetheless participants at the next convention will no doubt see some or all of those pictured, from left to right, Barry VK2DBA, Pat (XYL VK2BDT), David VK2VWH, Scott VK2VUT, Penny (Harmonic VK2PP), Peter VK2APP, David VK2BDT, David VK2NAW and Phillip (Harmonic VK2NAW).

VK3

An informal get-together lunch is held each Thursday commencing midday at the WIA Victorian Division Centre, 412 Brunswick Street, Fitzroy (one of the inner northern suburbs of Melbourne). ALL amateurs, both local and visiting, are invited.

The Centre can be reached by taking Nos. 9, 10 or 11 trams, to Stop 22, from Collins Street in the City of Melbourne. For those contemplating a visit the Divisional Centre can be contacted on telephone 41 3535. Amateurs announcing their intentions on the Channel 5 or 8 repeaters and who are lost will no doubt find their way through their ever-listening counterparts on the repeater network.

VK5

WOOMERA AMATEUR RADIO CLUB

The Club was first established in 1955 and is 25 years old this year.

Postal address: PO Box 538, Woomera, South Australia 5720.

Meetings: Club house, Killara Avenue, Woomera, every Wednesday night, 1900h CST.

On air some Club nights, most contests and field days and at other random times.

Award: VK5WC Award, three colours based on QSL card, good quality material. Cost $2.50 Australian.

Work Club station plus two local members or work four local members, since 3rd May, 1978.

Any band, any mode or cross band or cross mode. Earth and satellite repeaters permitted.

Certified log entry signed by two other mateurs.

Member activity: Some 2m FM (Port Pirie and Adelaide repeaters when path is open. Some CW, SSB and RTTY on 80-10m.

AGM: June each year.

Present officers: President, Dick Menz VK5OL; Past President, Alex Smith VK5MQ; Secretary, Mick Lindsay VK5ZMN. Ex officio: Awards Manager, Dick Ashton VK5DQ.

Membership: Varies from time to time. On air at present: VK5OL, VK5MQ, VK5LA, VK5DQ on HF; VK5OL, VK5ZMN on 2m.

Club station: Yaesu FTDX400, HF dipole and rhombic, Icom 202, steerable 2m yagi for Oscar.

Membership of the Club is a prerequisite under Department of Defence regulations for permission to transmit within the community including from the Club station; amateurs visiting either for business or social reasons are able to apply for permission to join.

Until 3rd May, 1978, VK5WC was the only call sign permitted to be used within the Woomera Prohibited Area. ■

AR ADVERTISERS SUPPORT WIA MEMBERS

VK/ZL/Oceania DX Contest 1979 — Foreign Results

CW SECTION

USSR:

UK2PCR	11100
UK1AAA	8466
UK9HAC	8184
UA1DZ	6984
UA3EAL	5379
UK2BBK	4901
UW0IX	4814
UA9NN	4536
UK4FAV	4455
UW9PT	3450
UA1ZW	3312
UA0MI	3025
UK6AAJ	2640
UA0ACM	2600
UT5EM	2520
UA9OBL	2400
UK3ACR	2300
UP2BAO	2200
UW0LN	2160
UK0FAD	2134
UK6LBM	2002
UK3XAB	1692
UR2QD	1659
UL7PBY	1440
UK2WAS	1034
UK0ZAF	1023
UH8DC	1020
UA9SBP	1010
UW1LW	960
UA6ARX	954
UO5OWC	936
UA6LHK	884
UL7PAZ	878
UA3QEL	800
UK3AAR	795
UA6AYR	795
UA0QDH	728
UK6VAF	702
UD6CN	689
UK5WAA	672
UP2BFE	611
UA6LLT	592
UB5MDI	565
UO5AP	549
UW3HY	492
UQ2GDM	450
UB5UWG	429
UA3TBQ	400
UL7PA	396
UP2BEI	384
UA6LCN	352
UA6APP	333
UB5WCB	333
UA6LAH	308
US2OCS	304
UA3ESN	296
RB5IWF	288
UB5ZAT	210
UA0LDN	203
UB5OE	200
UM8MBN	182
UA9QBT	161
UA3IDT	150
UF6QAC	140
UQ2PP	126
UL7EAT	120
UB5HCU	114
UR2OI	110
UK0LAD	107
UP2BEL	72
UK2AAX	48
UH8EAD	45
UO5GX	36
UQ2GFM	32
UW3UO	24
UA6CP	18
UB5IFN	18

LISTENERS' SECTION

USSR:

Phone:

UA6-150-952	1692
UO5-039-27	2208
UC2-009-453	2583
UA4-095-381	4337

CW:

UA0-107-324	79
UA9-145-197	4816
UA4-095-381	4375
UA2-125-267	285

PHONE SECTION

USSR:

UK2GKW	22770
UB5MCS	19470
UK2PCR	14112
UK0FAI	13878
UK9UAO	7364
UK9HAC	6525
UA0TC	5486
UA1DZ	4480
UV3CE	3650
UA3EAL	3312
UL7PBY	2967
UA6LBQ	2576
UA3QAQ	2030
UW0IX	2028
UJ8JCL	1890
UK9WBR	1800
UK4ABW	1615
UR2FQ	1550
UK4FAV	1548
UV3DN	1472
UK5IBM	1408
RA9CGC	1392
RA9CIU	1375
UA0LEO	1364
UK6AAJ	1229
UD6HG	1134
UG6JJ	1134
UL7MAR	1125
UA9SBP	940
UA1AHZ	632
UA9CBO	868
UQ2GBW	656
UP2BAR	624
UK6VAF	621
UO5AP	600
UF6QAC	598
UA9YE	550
UA6LCN	540
RB5IWF	536
UR2RAM	504
UB5WCB	480
UA1MU	468
UP2BBF	462
UK5WAA	420
UA0MI	396
UR2QD	374
RB5IVJ	371
UW1LW	304
UA1AWO	288
UP2BFR	287
UK5WBJ	280
UB5HCU	280
UA6AJG	144
UA2FBZ	132
UC2BF	132
UK5QBE	120
UA1CAI	112
UA6AKB	108
UP2BCD	100
UJ8XCW	80
UA3TAG	36
UO5OGX	20
UV3CS	20

LISTENERS' SECTION

Phone:

DMI0280/E	11220
BRS32525	9372
JA5-3033	6916
JA1-22717	6000
DM8252/H	5940
DM5173/G	4275
SP06SK	4160
I070612	4104
ONL383	3950
DL-8148	3432
JA9-2243	3751
OK3-915	3784
DM8580/A	2950
WDX9JFL	2520
HA5-273	2592
FE8957	2392
DM5724/C	2394
DM9572/E	2320
DM9876/A	2016
BRS15822	1846
DM7215/I	1680
DM9337/A	1320
DM9561/G	1120
I067612	1008
JA8-3769	840
I550661	812
DM9878/A	648
HA7-517	528
DL3266	540
OZ1239	528
SP51554	256
SP48/JG	230
DM9540/A	160
DM4406/G	120
NL5288	120
JA9-2352	78

CW:

HE9EVI	4260
HAS-745	2184
LZ2-P73	706

PHONE SECTION

Japan:

JR1WHW	28944
JA7GLB	28280
JA2YKA	17520
JA6LCJ	13431
JA7AMK	9870
JR1GSE	9720
JG1GX	9145
JA2AYH	8845
JA7YCQ	7414
JH1VRO	6812
JA2PSV	6524
JH0BBA	6524
JE2IEQ	5454
JA8DHI	5035
JA0JES	4225
JA6ABG	3427
JA9SQO	3348
JA5AHH	2717
JR3WXA	2480
JF3TVD	2430
JR3CVO	2266
JA7AQR	2244
JA6GGD	2196
JA5CPO	1600
JR3CVJ	1375
JR1PUO	1233
JA0FMB	1166
JA2MYA	1065
JH0IJC	1050
JH7UJU	900
JA2QZU	780
JA9AAY	710
JH4FOG	670
JA1ALX	645
JA9KGU	540
JA5XRF	504
JF2FHQ	496
JH4MVB	462
JH7AJY	450
JA9AQE	448
JE3OUU	408
JA1AAT	308
JA9NTR	272
JL1QNG	222
JA3AA	140
JH4DRB	130
JA3BVJ	80
JE3CRA	80
JA0GTM	56
JR1INZ/JDI	2

CW SECTION

Japan:

JA7DAH	9350
JG1IGX	8679
JI1KUV	7424
JA7AMK	7260
JA2WB	7099
JA9CWJ	6528
JA6GU	6235
JA3BKG	6003
JH0BBA	5973
JR3WXA	5856
JA1NI	5508
JA2DCN	4867
JA2BI	4030
JH3WKE	3666
JA1AEW	2919
JH2JEV	2772
JH1UUT	2672
JA4CTL	2332
JA2PSV	2178
JA1ODE	2093
JH1MTR	1932
JA8SW	1566
JH1BCY	1275
JA2QZU	1088
JA7EC	952
JH4DRB	860
JA7JT/JDI	816
JG1JMH	675
JA1OUM	590
JE3TYJ	540
JJ1OSP	539
JJ1KZS	360
JA2KPV	270
JA8PON	260
JH8KAN	240
JR2AGL	196
JR2BDG	182
JE3OUU	140
JA9SQO	126
JA6GGD	90
JH0DNX	50
JA1AAT	42
JK1LUY	30
JA9KGU	8
JA6FYM	2

CW SECTION

Europan Area:

SM5EVR	5445
OE3NPW	4495
DM3PO	4350
OH5UX	3870
DL1YF	2825
DL0KF	2782
LZ2RF	2678
SM5BAX	2475
DJ9CB	2438
OZ1LO	2400
U0Y	2222
LZ2KIM	2220
DK1KB	2139
HA9KOL	2058
HA4XT	2057
HA4XX	2024
LZ2KKZ	1958
DM3SBM	1794
SP3KEY	1562
ON4FD	1560
I5YDI	1512
HA8VB	1411
LZ1QV	1406
G3ESF	1311
HA5KKN	1292
LA3UG	1216
ON4XG	1139
HA5KFL	1110
HA8BY	1072
DM3PAA	1072
HA5KHB	1024
HA5KNA	1020
G5MY	1054
DJ5JH	880
G3KSH	816
OZ1DTF	781
DM2BUB	759
F6DYY	756
HA8KAZ	742
SM5ACQ	705
OK2ABU	700
DM4YZA	675
OK1ATZ	650
LZ2KSB	598
YU4VOY	585
YO8FZ	506
OK2BEM	468
G3PVA	468
OK3KJF	460
OK1FCA	448
DJ6TK	432
OH2SX	432
OZ1FRR	430
YO8KGA	420
4X4KX	408
HA5DE	352
OH7NW	350
HA5JK	344
OK3CFP	342
OK2QX	342
HA0IG	320
HA3HZ	279
YU7NZR	261
SP7HOV	260
DM4ZA	260
OK1KLX	256
DM2BJA	240
PA5OTA	240
HA3GA	234
OK1MKU	210
OK1CIJ	224
HB9DX	224
OH7UV	216
HA5NK	210
HA5LX	210
HA3HE	196
HA5HM	192
OK2BCI	192
OH2PM	180
OH1LU	175
YU7SF	168
DM3ZUE	162
SM5CSS	160
OK1ZY	156
DM4WFF	140
HA3GO	132
SM7CZC	126
YO2BEO	126
OH5SS	126
DM5BA	120
YO5AVP	120
OK2BBJ	112
YU3NP	108
OK2SPS	108
HA7TM	90
OK1AIA	84
SP5EPF	84
LZ1IA	84
OH2BAH	72
LA9HW	64
OK2BMA	60
OZ1BII	50
OK1PBG	50
DM2BGG	48
EA2IA	48
HA3GJ	40
SP9AKD	40
HA4XS	32
DM3ZDA	32
DM2FZH	24
DM3VLG	24
EA4BV	20
OK2SGW	18
OK1KZ	18
DM2CLM	8
SP6DMJ	8
OH2KI	8
SM6BBX	8
SP5LM	2
OH5Y	2
OK1KCF	2

PHONE SECTION

European Area

DL8PC	22225
OE3NPW	8932
G3TTJ	8816
PA0FSK	8758
OZ5EV	8585
DM2CMF	7500
DM2DTO/A	5539
I2VYR	5450
DL1KB	4752
SP3KEY	4209
HA4XN	4004
4Z4KX	3738
HA7KLG	3600
G3UVZ	3400
DM3XI	3140
OK2BBI	3297
XE1LLS	3087
DM2CDL	3068
PA0EHF	3024
I4CSP	3001
DL1JF	2992
OK1QX	2904
OK1AGN	2793
YO8FZ	2751
EA2IA	2751
I1YBM	2480
HB9IK	2457
DM3WMJ	2392
OH2PM	2261
DM3OAA	2200
LZ2RF	1920
EA1TA	1890
DM3SIC	1677
GM4FDM	1666
OK1AMI	1630
HA5KFL	1638
OK1STU	1479
DM5ZFL	1376
EA3NA	1066
ON6JG	1034
OZ8T	990
OK1JW	970
HAKVB	966
HB9AMA	780
I1SAT	774
LA5NM	714
HA4YO	689

SM5CSS	684
OK2BJR	594
DM4YZA	588
LZ1QV	506
HB9DX	480
OH6IU	432
HB9BAM	378
OZ2DM	369
DM4WFF	322
DM4PSN	320
SM0MC	300
LA2AD	216
DM4SF	216
YU7NZR	224
LX1MH	224
LZ2KKZ	270
HA0IG	288
SM7ABL	288
OK2SPS	216
OH5UX	189
DM2BGG	182
OH2KI	180
PA0COR	176
HA4XX	144
OK1TW	144
G5MY	144
EA6DE	144
DM2GFF	140
OK1KYS	132
OK3CFA	120
LA4HA	120
OK1CIJ	110
DM3OML	104
HA3KNA	90
SP7HOV	76
OK3ZFB	72
OH7UV	60
OH3JR	50
YO6AWR/P	54
DM4XCE	50
F6DRP	50
OK2SWD	48
SP9HWN	48
YO7NM	40
CT1AHG	40
DM2FLN	36
SP9EPF	30
OK1HCH	30
HA5HM	30
OZ4PM	24
OZ3KE	18
OK3CFP	14
OH7NW	8
OK1KIR	8

PHONE SECTION

North America:

K0CL	20300
K3TW	18722
WA0TKJ	10881
K6BPY	10620
VC3GCO	9290
KB8JF	6630
K4KUZ	5238
K0SVL	4764
W5OB	3480
N7XX	3420
VE7VT	3322
W7LGG	3014
WD5DUD	2090
K9GM	1926
W9QWM	1444
AE5Y	1425
WA4QMQ	1027
W3CM	1001
N2LT	948
W1YOU	870
N3RL	740
K1MEM	680
VE2WA	590
K4BAI	590
N6NNV	304
WB4WHE	72
W2UL	56
WA3DMH	48

CW SECTION

North America:

W7IR	12558
K0FX	8576
W1EVT	6765
W5OB	4644
W8UVZ	4125
K3TW	3822
N2LT	2706
WA4OML	1547
K1MEM	1022
W7LGG	1008
AE5Y	624
KL7HBK	532
VE2AEJ/3	408
WA4QMQ	320
WA3DMH	224
N4QN	182
W8EAO	154
VO1AW	128
W1PWK	96
W0BMM	55
VE3JKC	30
W2UL	24

PHONE SECTION

World:

VP2ML	888
5WIBZ	18360
P29CH	4544
HS1ABD	35156

CW SECTION

World:

HS1ABD	10255
5WIBZ	23322

CW SECTION

South America:

PY1DHG	2040
PY1BOA	260
PY3CFD	80

Conditions this year were reasonably kind for the contest period. Some high scores were obtained by operators on 10 metres, but unfortunately there appears to have been no real contest DX stations around in VK/ZL or Oceania.

Checking logs, however, we found VK9NW, YJ8PD, 5W1AZ, VK9XW, P29NDX, ZD1KR, 3D2, KH2 were operating and in doing so gave many operators their first DX into that part of the world. Some log comments asked where were ZL5, VK0, Chatham, Willis—Lord Howe? All VK/ZL mainland stations were found in abundance, with the "N" calls in good proportions. Compliments to the many operators for their well laid out logs, specially those who used the organisation's summary sheets.

COMMENTS FROM LOGS

JR3CVJ, I want that VK/ZL/O stations more QRV on 15m band. **JA1NI**, on same day we had big contest in Japan, so had some confusion. **JR2BDG**, I enjoyed this contest, would like to contact VK9 and VK0. **W3CM**, 10m did open, but not good enough for my dipole. I screamed my lungs out for **ZK1DR**, but never worked him, but had a lot of fun. **WD5DUD**, I enjoyed working 49 great guys. **VE3JKC**, my first VK QSO, not bad for 3 watts hi. **SM3EVR**, activity seemed low but worked **VK4X?** and **ZL3GO** on 4 bands.

And that completes another contest, with the 1980 Contest being conducted by the NZART.

73s. Neil Penfold VK6NE. ■

TECHNICAL CORRESPONDENCE

16 Gari Street,
Charlestown, NSW 2290
PO Box 74
21st November, 1979.

The Editor,
Dear Sir,

"SPREADING"

One hears this sort of thing on the HF bands from time to time: "He was spreading over 10 kHz . . . I tracked him out for 3 (or 4) kHz on either side of his signal and took readings on the S-meter at 1 kHz intervals and so was S9 all the way . . . overdrive, of course . . . some blokes can't be told."

This is utter nonsense.

Am I asked to believe in all conscience that the transmitter was actually radiating energy over the whole of the 10 kHz band of frequencies referred to above? Am I further asked to believe that the energy is of sufficient magnitude to sustain an S9 meter reading throughout the whole range? If queried on these points the observer would no doubt cite the evidence of his own eyes, accompanying it with a show of indignation. I suggest, however, that he would be overlooking two important points:—

1. The S-meter reading is **not** an indication of the magnitude of the energy received on the frequency to which the receiver is tuned. The S-meter reading is determined by the entire energy received by the receiver in accordance with its selectivity curve centred on the frequency to which the receiver is tuned. The compass of the selectivity curve may extend quite some distance frequency-wise from the frequency to which the receiver is tuned.

2. AGC will cause the sensitivity of the receiver to vary from point to point over the 10 kHz (or whatsoever) band of frequencies being considered. In the case of a very strong signal one would expect the receiver to be heavily de-sensitized over the centre 4 kHz or so and hardly de-sensitized at all at the extremities of the 10 kHz section being considered. Unless this change of sensitivity, arising from the action of AGC, is properly taken into account then S-meter readings don't mean much anyway!

We recently had the distasteful spectacle of a well known VK5 being harassed by a groups of VK2s who accused the VK5 of "spreading" on 20 metres. I checked out the VK5 by scientifically-correct methods on a number of occasions, and on every occasion that I checked him the bandwidth of the channel that he was occupying was no more than 3.5 to 4 kHz. You would not call this "spreading"! Certainly the signal was very strong at times.

I have here before me, as I write, a letter from a well known VK2 who says inter alia: ". . . asked him to reduce his audio gain as he was spreading well above his operating frequency . . ." I suppose it is more socially acceptable within the amateur movement as at present constituted to say: "The VK5 spread" rather than to say: "My receiver lacked the necessary selectivity to discriminate against a very strong VK station only a few kilohertz away; I was not helped in this difficult situation by my AGC, which presisted in attempts to operate the receiver at its maximum sensitivity". This fairly puts the blame where it properly belongs — on the inadequacies of the receiver — and not (quite unfairly) on the transmitter.

To conclude, I commend this simple experiment to the experimentally minded: Find yourself a station that you believe to be "spreading", preferably someone who is making a long speech. Incapacitate the AGC. Tune the station under manual RF gain control so that he is coming in nicely at comfortable strength. Disregard the S-meter. Now without touching the gain control (this is most important) tune off on either side in turn. You may be astonished to find how rapidly, frequency-wise, the signal disappears from view, or should I say audibility. No sign of spreading! I leave you to ponder your observations.

Yours faithfully,
Colin Yates VK2AGZ. ■

Quo Vadis?

From the numbers of CB manufacturers going to the wall, and the report that exports of Japanese CB equipment to the USA dropping by 78 per cent in 1979, and from the drop in numbers moving to amateur radio from CB, it seems that CB growth has reached its peak. The CB truckie movies, the TV shows and pop songs are history now, and even though there must still be interference problems, and big stories about rescues with CB, the stories just don't make the news much any more.

Perhaps this is the time for the amateur radio clubs to take stock of the situation. The present situation in the CB movement means that fewer prospective amateurs will be coming to fill the local club amateur classes. Those who wanted to upgrade have already done so.

Let's face it. At the peak of the CB rush, amateur radio never had it so good. We had a growth rate hitherto unprecedented, and all for so little effort. From hereon it's not going to be quite so easy.

How can we avoid the stagnation in radio activity and growth?

- **Firstly, we're no better advertisers than we were then. How many clubs have a regular splurge in the local radio shop? How many clubs have put on a display of gear (under glass) at the local store or bank?**
- **How many clubs canvass their local schools to see whether they have any electronics courses, or try to encourage interest from the school staff in starting a school radio club as a "feeder" for the area club? Has the school had an offer of help from the club?**
- **How about co-operating with your local show society to run a competition for constructors of radio gear, simple and complex.**
- **Is your club the kind of place that members look forward each week to the next club night?**
- **How welcome is a newcomer or visitor in your club? Do you have a roster of members to welcome strangers and show them over the place, or is such a person the object of furtive stares?**

What's your idea — where will your new members come from?

By Ken Hargreaves VK2AKH, Editorial from Zero Beat, March 1980. ■

CONTESTS

Wally Watkins VK2DEW
Box 1065, Orange 2800

June:

14/15	VK/ZL/OCEANIA RTTY CONTEST*
21/22	21st ALL ASIAN PHONE CONTEST
21/22	WEST VIRGINIA QSO PARTY
28/29	ARRL FIELD DAY

* This is not a WIA contest.

July:

1	CANADA DAY CONTEST
20	RSGB WAB LF CW CONTEST
26/28	COUNTY HUNTERS CW CONTEST

August:

9/10	REMEMBRANCE DAY CONTEST
9/10	EUROPEAN CW CONTEST
23/24	21st ALL ASIAN CW CONTEST

October:

4/5	VK/ZL/OCEANIA PHONE CONTEST
11/12	VK/ZL/OCEANIA CW CONTEST

21st ALL ASIAN CW CONTEST

ASIAN COUNTRY LIST

A4, A51, A6, A7, A9, AP, BV, BY, CR9, EP, HL/HM, HS, HZ/7Z, JA/JE/JG/JH/JI/JJ/JR, JD1/JT, JY, OD5, S21, TA, UA/UK/UV/UW9-0, UD6/UK6C/D/K, UF6UK6F/O/Q/V, UG6/UK6G, UH8/UK8H, UI8/UK8A/G/I/L/O/T/Z, UJ8/UK8J/R, UL7/UK7, UM8/UK8M/N, VS6, VS9M/8Q6, VU, VU/A, VU/L, XU, XV, XW8, XZ, YA, YI, YK, ZC4/5B4, IS (Spratly), 4S7, 4W, 4X/4Z, 70 (Yemen), 70 (Kamaran), 8Z4, 9K2, 9M2, 9M8, 9N1, 9V1.

JOHN MOYLE MEMORIAL FIELD DAY 1980

Once again this contest proved to be very popular and there were a few newcomers on the list. The standard of log was excellent and made checking a pleasure. The rivalry between clubs makes this annual event the success it is. Thank you for participating.

"THE OOPS WE GOOFED IT AGAIN DEPT." — 1979 RD ERRATA, ETC.

Add to VK6 CW — VK6WT 1620 now first place; add to VK2 Phone — VK2AGF 669; change VK6 CW and Phone — VK6FI to VK6IF; change in VK5 Phone VK5NCL to VK5NLC.

SUNSHINE STATE JACK FILES MEMORIAL CONTEST 1980

AIM

1. To prepare Queensland Radio Amateurs for the 1980 Remembrance Day Contest.
2. To enable Queensland Radio Amateurs to complete the "Worked all Queensland" Award.

OPERATING TIMES

Saturday and Sunday, July 19 and 20, 1980. A total of 8 (eight) hours of operation, divided as follows:
Saturday, July 19: 0830-1230 GMT (1830-2230K).
Sunday, July 20: 0000-0400 GMT (1000-1400K).

SECTIONS

(a) *Transmitting ALL authorised radio amateur frequencies.
(b) *Transmitting HF only.
(c) *Transmitting 50 MHz and up.
(d) Receiving ALL bands.

*** The 1979 Queensland Radio Club Workshop resolved that, for local contests, only specific frequency sections be used, so as not to cause interference with normal amateur traffic. It is hoped that by giving this example National Contests may follow suit.**

The following frequencies on the HF bands only will be used for the Jack Files Contest:

†1.810-1,820 MHz, 3.525-5.575 MHz, 7.000-7.060 MHz, †14.125-14.175 MHz, 21.125-21.175 MHz, †28.200-28.450 MHz.

† These frequencies are applicable for section (b) for Novice and Full Call use.

VHF and UHF contestants will follow accepted band plans.

SCORING

1. (a) One (1) point per contact on each band.
   (b) A BONUS score of ten (10) points for the FIRST contact made into a City, Town or Shire, each band. These bonus points will only apply for the first contact on BOTH days, NOT FOR EACH DAY.
   (c) CW to CW contacts will attract DOUBLE points, **including** bonus points.
2. **50 MHz and up:**
   The same scoring as under 1(a), 1(b) and 1(c), PLUS ADDED points for distances worked:
   0-50 km, no bonus points; 50-100 km, 2 (two) points; 100 km and over, 5 (five) points.

CONTACTS

(a) One contact per band per mode per hour.
(b) Cross band and mode contacts are not permitted.
(c) Terrestrial VHF and UHF repeaters are not permitted.

LOGS

These are to show:
(a) The section(s) entered.
(b) Points claimed for each contact (if not filled in correctly, only 1 (one) point will be allowed).
(c) VHF and UHF logs **must** show the distance in kilometres between the stations.
(d) Logs to show: Date and time in GMT; band and call sign of station worked; report and serial number sent and received; bonus points claimed, where applicable; for 50 MHz and up, distances over 50 km.

Closing date for logs is **August 29th, 1980,** and addressed to **WIA Queensland Contest Manager, PO Box 964, Townsville, Qld. 4810.**

AWARDS

A trophy will be awarded to the highest scorer in each section.

Good luck and let those logs roll in!
Dave Noble VK4NOB, VK4 Contest Manager, 1980.

MOORABBIN AND DISTRICT RADIO CLUB ANNUAL MID-WINTER FIELD DAY, 1980

DATE

Sunday, July 13th.

TIME

11 a.m. to 4 p.m. EAST.

SECTION A

VHF. Any band 52 MHz and above.

SECTION B

28 MHz only.

MODES

Any authorised mode may be used.

1. All stations must operate within the terms of their licence.
2. Portable stations must be located not less than 2 km from their home QTH.
3. Portable stations must **not** use private or public mains supply.
4. Any station may be worked twice provided that at least two hours elapse between the two contacts.
5. Net frequencies or repeaters **must not** be used for scoring contacts.
6. No cross band operation permitted for scoring purposes.
7. **SCORING**
   Section A: VHF/UHF. Portable to portable.
   4 points per km up to 500 km on 52 MHz;
   1 point per km over 500 km on 52 MHz;
   4 points per km for all contacts on 144 MHz;
   12 points per km for all contacts on 432 MHz;
   16 points per km for all contacts on 576 MHz;
   24 points per km for all contacts on 1296 MHz.
   N.B.: Scoring for portable to fixed stations are half above.
   Section B: 28 MHz. Portable to portable.
   4 points per **contact** within you own call area;
   2 points per **contact** outside your own call area.
   N.B.: Scoring for portable to fixed stations are half above.
   Bonus Points both sections:
   All contacts with MDR Club station VK3APC count double.
8. All competitors are limited to only one operator at any one time.
9. **ENTRIES:** Entries will be accepted from any portable station subject to Rule 8 above. NO ENTRY FEE REQUIRED.
10. **FORM OF ENTRY:** Log extract with all points calculated and totalled.
    Post to: Contest Officer, Moorabbin and District Radio Club, PO Box 88, East Bentleigh 3165, Vic., to arrive not later than August 11th, 1980.
11. Winners of each section will receive Honorary Membership Certificate, 12 months Club membership, 12 months subscription to the MDRC magazine.

All enquiries to Graham Mason VK3YGM. Phone (03) 95 8108. ■

INTRUDER WATCH

Graeme Fuller VK3NXI

As you all know, I took over the position of Federal Co-ordinator from Alf VK3LC in January. I am not sorry on taking the position but very disappointed with the lack of response in reporting intrusions into **our** bands.

At a recent meeting with the Frequency Management Division of the Postal and Telecommunications Department it was impressed upon me that, owing to the lack of reports coming in, it wasn't worthwhile following up complaints. Furthermore, if more complaints were received (with bearings) more action would be taken.

When one considers there are only approximately 20 individual reports coming in each month from an estimated 12,000 amateurs, one can't really blame the authorities for not taking action under these circumstances. The only answer is to send in reports and not sit back cursing under our breaths, hoping someone somewhere will do something about these intrusions. **You** as amateurs are the only ones that can do anything about it, or else just sit back and put up with whatever comes along.

I sometimes wonder if there would be an outcry if a few stations intruding in our bands were to use phrases like 10-4, Good Buddy, what's your 10.20, etc., etc., it's just the same as having pulse, FI and AO, etc., on our bands all the time. With the ever increasing intrusions into our bands, how long before they are totally unusable?

Recently it was brought to my attention that the Intruder Watch monitors job was to report on misconduct by fellow amateurs. **This of course is totally untrue.** The behaviour of amateurs is monitored by an advisory committee not Intruder Watch monitors.

Intruder Watch monitors have a regular sked Thursday evening, 1030 GMT, frequency 3.540±. Originally it was 3.620, but owing to QRM we have moved down the band. Anyone at all is invited to join in, perhaps to make a complaint or enquire about our activities.

Graeme Fuller VK3NXI, Federal Co-ordinator. ■

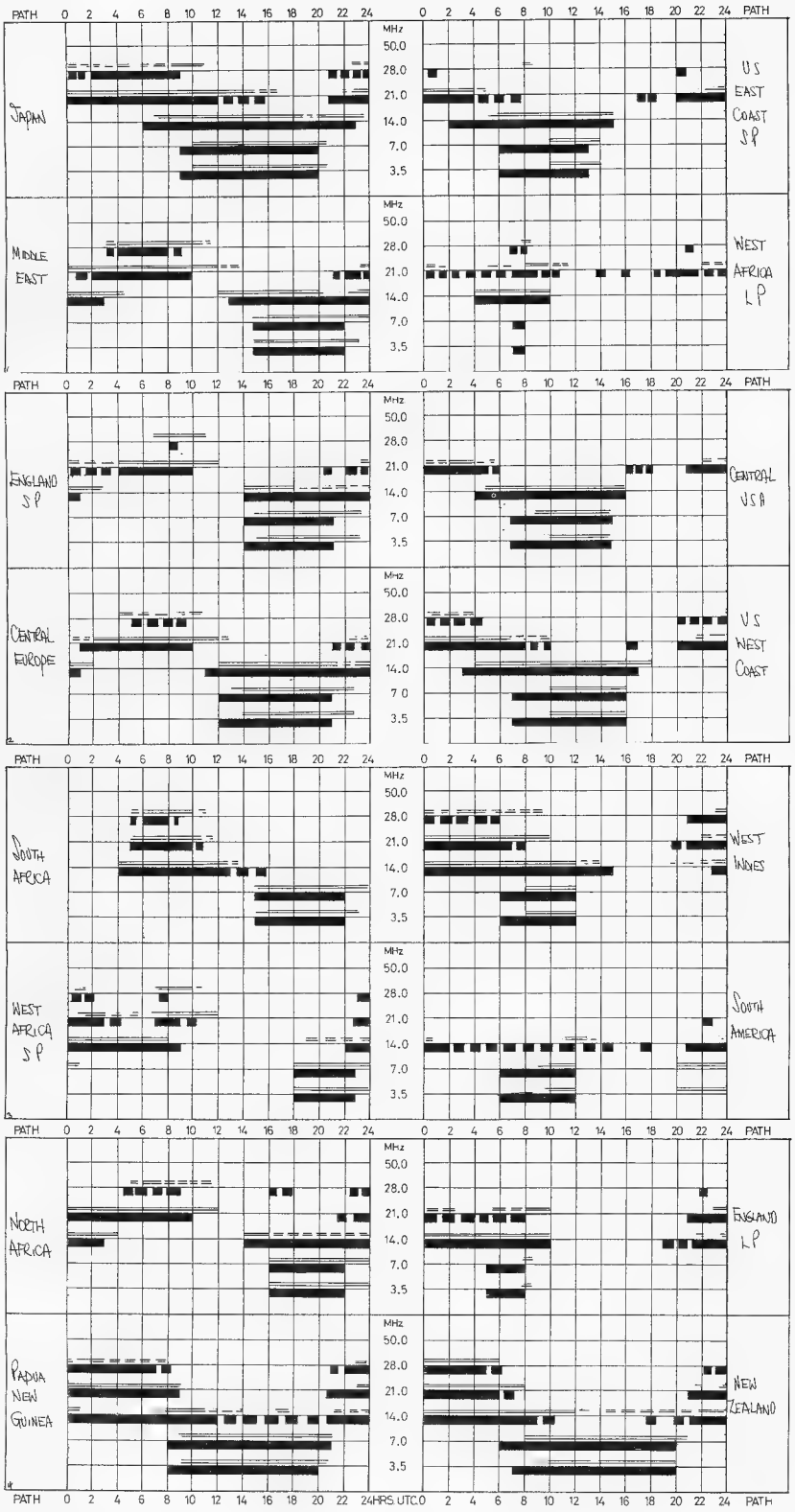
QSP

PREFIXES

During 1980 amateurs in Belgium may use the prefix OR in place of ON. This is part of the 150th anniversary celebrations of the independence of the Kingdom of Belgium. Employees of the RTT (Regie des Telegraphes et Telephones) may use the prefix OT in place of ON to mark the 50th anniversary of the founding of the RTT — this is also throughout 1980. ■

IONOSPHERIC PREDICTIONS

Len Poynter VK3BYE



LEGEND

FROM WESTERN AUSTRALIA

FROM EASTERN AUSTRALIA

BETTER THAN 50% OF THE MONTH, BUT NOT EVERYDAY

LESS THAN 50% OF THE MONTH

PREDICTIONS COURTESY IPS SYDNEY - ALL TIMES UNIVERSAL UTC (GMT).

YOU and DX

Mike Bazley VK6HD

8 James Road, Kalamunda W.A. 6076

Amateur Radio is a great hobby! I do not expect to get any disagreement to that statement, but is Amateur Radio as good as it used to be? Speaking for myself, I have always been interested in DX, firstly as a listener then as a licensed amateur. Thinking back 30 years ago, my first transmitter and most of my first receiver was built from other amateurs' junk boxes. All QSLs seemed to go via the bureaux, there were no DX news sheets or DX nets, and a DXpedition was really an unknown quantity. To be able to work a hundred countries required patience and listening ability. Nowadays we have instant QSOs, DXCC in a weekend, DX-peditions, IRCs, news sheets telling us where such and such a station is going to be at such and such a time. No one seems to have a junk box any more, and to suggest building a 10 watt Tx with a 6L6 final, well!!! (What is a 6L6?)

Yes, I still get a kick out of chasing the DX, but if I'm to be honest with myself, perhaps I object to the new breed of younger amateurs showing me how it should be done. Good old nostalgia!

From VK3OT comes news of his recent trip to VK9 (Christmas Island) signing **VK9XT.** To quote from Steve's letter —

"At the time of writing the following results are evident from my one man assault on the DX world, VK9XT.

1,700 JAs on 6 metres.
11 countries on **6** metres.
12,500 HF QSOs on all bands.
Majority on 10, 15 and a lesser part 20.
750 on **40** CW.

10 on **80** CW/SSB with VK6, one VK7, one W6, one JA3.

Nil on 160 metres.

As far as a band plan, the Indonesian amateurs use AM right down to 3500, so it is virtually impossible to copy VK amateurs on 80 especially since the band only comes good at 13.00 UT. Some of the calls worked here included: **C5, JY, JT, YU, TY9, TZ, EP3, JW, JX, VK0, CP6, VR6, 9A1, 7X2, J28, UM8 UI8, UJ8, UG6, UD6, UF6, UK1PAL, GD4, GJ4, HR1, PZ1, HK0, S2, VU2, AP2, A7, A6, A4, HS, 9N, 9G1, TJ1, ZS3, SV5, SV0, 9H, OJ1, OH0, OY5, EI,** etc. etc.

Operating was for 17 hours per day with an average of three contacts each minute for the total operating time. Single op., single transmitter and single quad ant.

Thanks go to Craig and Lois Woodford for their hospitality, bed and meals which ensured the continuity of the operation over the 18 days. QSLs direct only to **VK3OT** with 22 cent stamped addressed envelope for VK and sufficient postage for return for the rest."

Jill VK6YL forwards extracts from a letter she recently received from **Moody VS5MS**, which is as follows:—

"The other day my QSL manager sent me my first batch of cards, to tell you the truth I was overwhelmed by all the kind words and good wishes. I only wish I had the time to reply to each card myself. In such troubled times it's nice to know that there are still some good people walking this earth.

Maybe you will do a little something for me! If you have the time in your local ham paper, magazine, etc., could you on my behalf send a letter thanking all the hams in Australia for all their cards, their goods wishes, and the very best of 1980 to all the Roos, Hi! — not forgetting the Tas.-devils. In 1979 I really had a wonderful time DXing to Australia, twisted quite a few tails — and in general had a wonderful time with your ham friends and the girls and guys on the Natter Net. Also for information **N200** is my manager. I am sure there are a few people that are still fuming because VS5MS has not replied to their cards! So **N200** is the man to track down."

Whilst writing about **VS5MS**, I was sorry to learn that his father, **9M2AT**, is now a silent key. Our condolences to Moody, and we are sorry to know that the amateur radio ranks will now be a little poorer.

A reminder not to neglect those LF bands during winter. Even though 10 may be wide open, 80 and 40 still carry some worthwhile DX. Stations worked from the West recently include **A7XE, FH0FLP, GD4BEG, JW7FD, S8AAP, ZD8TC, 4S7OL, 4S7DA, 6W8DY, 8Q7AR, and 8Q7AW.**

The Heard Island DX Association has been formed to plan a major DXpedition by a group of experienced operators. Dates are given as between December 1980 and February 1981. As the cost of mounting such a DXpedition is considerable, offers of help, monetary or equipment, are sought. It is suggested that if you wish to help you can contact **P29JS** for further details. (G. Watts News Sheet.)

It has been reported that **N4HX/TT8** had to leave Tchad in a hurry due to the recent change in the political situation. The ARRL are accepting his cards for DXCC though at the present time QSLs from **TN8AJ** are **not** being accredited.

This really is the last DX notes that 6HD will be writing for some time. Many thanks to those who have given news and to those who wrote asking me to continue. When I accepted the position, I did so on the understanding that it would be for one year only. I hoped (I do not know how this fits in with AR editorial policy) that different people would write for successive one year periods. Thanks to VK3DU, VK3OT, VK6AJ, VK6RZ, VK6LK, VK6YL and L70107.

Vy 73s es DX Mike VK6HD.

QTHs YOU MAY HAVE MISSED
A4XHI — Box 8530, Salalah
CO7UP — PO Box 41, Camaguey, Cuba
HS5AID — Box 169, Chiang Mai, Thailand, or via AG6D
FK8AI — via I0PQ
FR7BE — via W4LZZ
H44AJ — PO Box 151, Honiara, Solomon Is.
HZ1AB — via K8PYD
JY3ZH — via DJ9ZB
JY5ZM — via WB4RRJ
KC6BS — via JH7LMZ
KH3AA — Box 69, APO, San Francisco
SV9JI — Box 502, Heraklion, Crete
TG8DX — via W3HNK ■

WICEN

Ron Henderson VK1RH
Federal WICEN Co-Ordinator,
53 Hannaford St., Page ACT 2614
Ph. (062) 54 2059, A.H.

WICEN VK7 ANNUAL REPORT 1979-80

Since this is the first formal WICEN Annual Report for a number of years, I will briefly outline events and activities since the WICEN organisation was rejuvenated, starting with June 1978.

At that time the WIA was asked to attend a seminar on Search and Rescue Communications, and the inaugural meeting of the State Disaster Communications Planning Committee, set up by the State Emergency Services. The previous State WICEN Co-ordinator, VK7RR, delivered a paper at the SAR Seminar (organised by the P. and T. Department), and I attended the SDCPC meeting, initially as Assistant Co-ordinator. The SAR Seminar was mainly concerned with the problems of communications between air and sea, also air and land, but the capabilities of amateur radio operators was explained to the relevant authorities.

The SDCPC has been meeting at regular intervals since June 1978, and has recently completed the communications sub-plan of the State Disaster Plan. The bulk of this plan is taken up with a complete list of the communications resources of the various bodies represented. It is interesting to note that WICEN is the only non-Government organisation represented on the Committee, and the WICEN section of the plan describes the organisation, functions, contact points, equipment, frequencies and modes available.

During 1979 WICEN became very strong in the southern area. At the present time we have twenty-one registered members and about fifteen of these have taken part in exercises during the year. Two exercises were conducted: the first to provide back-up communications for the Boy Scout Regatta at St. Helen's in May; the other was in the Lakes Pedder and Gordon area in October with the Police Search and Rescue Unit. An experiment was also conducted to determine the propagation of 160 metre signals in caves, in conjunction with the Police SAR Unit and the Southern Caving Society, in December. Finally a field day was held at South Arm to give the portable equipment (including RTTY) a good workout.

As a general comment, two things can be said about these exercises: firstly, that all who took part in them enjoyed themselves (it is only a hobby!) and, secondly, that a lot was learned about equipment and techniques, and how these could be applied to best effect in an emergency. Five individual amateurs have assembled complete stations into a rugged "box" capable of being taken into the field as a self-contained unit. The boxes contain an HF SSB transceiver, HF antenna tuning unit, 146 MHz FM transceiver, 240V AC-12V DC power supply, and even a 12V light. Combined with the 9 metre portable aluminium masts, which support an inverted-V HF dipole and a 146 MHz ground-plane or coaxial dipole, a complete HF/VHF station can be operational within 10 minutes.

Portable 2m repeaters, assembled from mobile transceivers, have been developed and tested, and five sets of patch cords and modified transceivers are now available. The complete details will be revealed in a forthcoming article in "Amateur Radio". Battery lead and aerial connector conventions have been agreed upon, and work is continuing on construction of a patch system from HF to VHF and vice versa. There is also some experimentation being carried out with 160 metre transceivers, following the encouraging results of the joint exercise. At this stage it appears that we may be able to provide radio communications underground in some situations.

The Police SAR Section has contacted the employers of southern members and obtained agreement for release of personnel if required in an emergency.

In the other areas of the State, the northern branch conducted three WICEN exercises, two associated with car rallies run by the Light Car Club, and one with the mini Olmypics run by the St. George's School Parents' and Friends' Association. Six amateurs from Launceston registered with WICEN (by returning the questionnaire) and hopefully 1979 will be seen as the beginning of a strengthening of WICEN in that area.

Apart from some monitoring of the Lake Pedder exercise by individual amateurs, there has been no WICEN activity in the north-western area.

Looking to 1980, there are three things which I would like to see occur. The first is the commencement of WICEN activities, field exercises and related technical activity in the north-western area. While the response to the questionnaires was not very good, I know that there are many north-western members interested in WICEN, and I hope that the activities of the southern group in 1979 will give them some idea to start off with. Secondly, the interested members in the north must become a more active and identifiable group. And finally, on a State-wide scale, I hope that some formal training in WICEN procedures, based on the syllabus prepared by the Federol Co-ordinator, will commence.

In conclusion I would like to thank the WICEN Co-ordinators who have assisted me during the year, and all those members who have participated in WICEN activities. I can only hope that they enjoyed the year as much as I did, and that we can arrange things in 1980 so that WICEN becomes even more effective, and the interest of members is maintained at the present high level.

Andrew Boon VK7AW, State WICEN Co-ordinator.

PS WICEN: Wireless Institute Civil Emergency Network . . . providing a pool of trained, licensed operators, with equipment, available for deployment to aid communications in an emergency.) ■

AMATEUR RADIO ACTION

is the NEW GENERATION amateur magazine.

★ Comprehensive DX notes
★ Propagation forecasts
★ Very technical - and not so Technical articles
★ Useful projects

Here are just a few of the articles which have appeared in recent months

★ Fixed wire beams
★ Case for UHF beacons
★ 80W linear for 6m
★ Wilson System Three review
★ Spratly DX exclusive
★ Backyarders - good or bad?
★ A.T.V. Special
★ SWL notes

Average page content is 80 pages - at $1.20 an issue that's good value.

Please put me down for 12 editions of Amateur Radio Action, starting NOW-

Rates In Australia — $14.40. Surface mail overseas — $18.40 Air mail: To New Zealand — $A28.70; Malaysia — $A32.60; Japan — $A38.45; USA — $A42.35; UK — $A46.25

Herewith enclosed cheque/postal note/money order to the value of:

$A .....

Name.....

Address.....

.....

.....

Postcode.....

Post to: Amateur Radio Action Subscriptions, Box 628E, Melbourne, 3001.

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

PO Box 11, Woomera,
South Australia 5720.
5th March, 1980.

The Editor,
Dear Sir,

MARITIME DISTRESS WORKING ON AMATEUR FREQUENCIES

With reference to the QSP on page 19 of Amateur Radio, February 1980, about the "White Wave" (VK4NXV/MM) incident in the Indian Ocean, I would like to add some pertinent information which shows how useful our service can be, with members all over the world, when someone gets into trouble. On occasions, as at this time, the official authorities appear to be unable or unwilling to do anything to assist.

There were of course many stations involved; perhaps I might mention the principal ones, Doug VK3YK, Tom VK6TB, the yacht "Rainbow (Frank) VK8AB/MM also in the Indian Ocean, Barrie 9M2RR, Nara 9M2LN, Mike and June ZS2MJ/ZS2JJ, 3B8DA, and ZS6AQY to whom credit must go for causing search and rescue operations to be initiated. Also to the SEANET (not restricted to South-East Asia) controllers' QSP'd updates to stations all over the world. I discovered after suggesting a 21 MHz similar net that Don VK7DK, 9M2LN and 9M2RR had already discussed this a few months previously; I understand that although nothing formal has yet materialised, many ideas have been kicked around including running both simultaneously — something like this could be of value in future. Fortunately for all involved the assistance of the South African emergency services was obtained as a direct result of a change QSO 3YK had with Dennis ZS6AQY at 1050Z on 4th December. Dennis is an airline captain from Johannesburg, who immediately telephoned the authorities in Cape Town, and I suspect pulled strings as results occurred at daybreak.

May I emphasise that VK4NXV/MM was eventually located as a result of a CW SOS transmission, that outdated inefficient mode that some people would have thrown out of the window. They had flat batteries, a jury-rigged antenna and a busted microphone. If CW was deleted from the requirements for operation, eventually OTs (who can read it) would be silent keys and nobody would be around to recognise a distress call.

Thanks should also go to Col VK1AU who personally contacted Marine Ops in Canberra with as little effect as VK4SE had a day or so earlier; I understand that Marine Ops had a regular telephone sked with Steve so that they could be updated!

The usual congestion around 21.150 MHz eased after a few days. Literally hundreds of people all over the world were listening in relays around the clock for the eventual QRPpppp SOS several days after the last R/T transmission that told us all that there was still life there, and which a ship standing by with fuel for them was able to D/F on to.

To change to a different but related subject, may I comment on VK2DQS's letter to the editor in the same issue of "AR" concerning operators not knowing what to do when confronted by a "Mayday". I am not by profession a marine operator, though I do hold the 3rd Class Commercial Operator's Certificate of Proficiency in telephony and telegraphy, was for a brief period a pilot with the Royal Air Force and was for several years a member of the British Life-Boat Service, so feel reasonably competent to comment on emergency procedures.

A distress message may be originated by a station not in distress itself if (1) the station in distress is unable to transmit, (2) the person responsible for the station considers further help is necessary, or (3) it has heard an unacknowledged distress message. Under international maritime law the control of ALL traffic is the responsibility of the station which SENDS the original distress message, unless that station delegates the responsibility to another station. The control station has absolute authority to impose silence on ALL OTHER TRAFFIC, not only on that but on adjacent frequencies. These points are stated categorically in the handbook quoted above.

To conclude, silence periods are enforced on marine calling frequencies for three minutes past each hour and half hour on phone bands, and past the quarter past and quarter to on CW bands, regardless of whether or not any distress traffic is being handled; this to enable weak signals to be heard without QRM. It might be an idea when conducting maritime and other emergency traffic handling in the future to adopt this international practice; we may be amateur operators but let us not operate amateurishly! Let's learn what to do and what not to do (perhaps more important) if we are to preserve our public service image. In addition perhaps the IARU might be asked to recommend a 5 or 10 kHz "slot" on the 20 and 15 metre bands to be used for the ever increasing maritime mobile amateur traffic, both for emergency and routine check-in purposes, as is done on 2182 and 6204 kHz by the professionals. Maybe the parallel SEANET discussions will produce some thoughts along these lines.

I would be extremely happy to talk about and expand these ideas with anyone, either on air or through the mail (SASE please).

Vy 73 de VK5DQ.
C. R. W. Ashton.

(Apologies that space precludes publication of the Distress and Urgeny Signals section from the P. & T. R/T Ship Station Operators' Handbook but the new Amateur Handbook expands slightly on this subject.—Ed.) ■

Heard Island DX Association,
C/- PO Box 2053, Konedobu,
Papua New Guinea.

The Editor,
Dear Sir,

Anybody who has followed the recent activation of Heard Island will be disappointed in the misfortune suffered by the people involved. Even if all had gone well, the size and duration of the operation (indispersed as it was with the requirements of a scientific expedition) meant that the total of anticipated contacts would not exceed around 1000 QSOs.

Prior to VK0RM, Heard Island had not been activated for 8-10 years and has never been the sybject of a full blown DXpedition. It is intended to try and change this situation within the next 10 months.

The Heard Island DX Association has been formed for the purpose of activating Heard Island.

A considerable amount of research has already been done in conjunction with the scientific expedition which took place in March this year. During the coming months further work involving the necessary logistics to support a serious amateur DXpedition to Heard Island will continue.

The Australian authorities concerned have indicated that there would be no serious objection to a well planned, well founded and good intentioned amateur DXpedition. It is intended that the Association will offer a place in the team to a professional scientist to carry out research on Heard Island over the duration of the DXpedition.

It is anticipated that the team will consist of a number of experienced "contest type" operators who, while capable of dealing with the tremendous demand that exists for Heard Island, will have the capability of offering other skills which will contribute to a successful operation.

The financing of any major operation invariably creates problems; the costs of mounting this DXpedition will be considerable. Many people and DX groups have indicated a tremendous interest in the activation of Heard Island and offers of assistance have been numerous.

Funding of the 1980-81 DXpedition will be based on the following criteria:—

(a) Each member of the amateur team will be required to contribute to the expedition fund.

(b) Individual donations will be accepted.

(c) Offers of financial assistance from the various amateur radio societies, radio clubs and DX groups will be accepted.

(d) Residue of funds accrued after completion of QSL commitments.

A trust account has been established by the founder members of the Heard Island DX Association to account for the funds received, and receipts will be issued for all contributions.

In the unlikely event of the DXpedition not taking place as scheduled, all donations will be either refunded or allocated to another DXpedition or worthy charity. In either event, all donors will be notified personally.

Firm offers of radio equipment have already been received. But no offers of ancillary equipment, antennas or power supplies, etc., have as yet been solicited.

Owing to weather conditions the time slot available is mid-December to mid-February. As you can see the time factor to allow an operation to take place in 1980 is very limited.

We would seek your help in, firstly, publishing the intended venture as widely as possible and, secondly, in requesting fellow amateurs to support the DXpedition in any way they can.

We thank you for your co-operation and assistance in helping us to activate one of the most difficult and rare DX countries in the world today.

Yours faithfully,
Jim Smith P29JS,
President Heard Island DX Association. ■

13-15 Bewley Street, St. Arnaud, Vic. 3478.
11-3-80.

The Editor,
Dear Sir,

At around 10.30 a.m. EAST on 9-3-80, I had just concluded an SSB QSO on 7042 kHz when a "voice" broke in with "This is the official International RTTY frequency. Move off this frequency — AND STAY OFF!!" Such an unmannerly outburst rather flabbergasted me, and I neglected to ask for a station identification.

Apparently "the voice" was not aware that "the amateur is always courteous", or perhaps felt himself the Almighty's gift to amateur radio?

His fundamental frequency was around 7041.5 kHz. I can find no official reference to an allocation of an International frequency (exclusive or shared) for RTTY. The only reference I can see is to a WIA-VK2 broadcast on 7045.

My first inclination was to refer the matter to the Licensing Branch but on consideration feel the interests of amateurs generally would be best served if you would publish what information you have. It is unfortunate that I did not identify the station, but hope you may enlighten me and, I feel, lots of others.

Many thanks and 73.
Harry M. Finnigan VK3PX.

EDITOR'S NOTE:

Although the "gentleman's agreement" still applies on the various modes for each band, there is no excuse for blatant rudeness by fellow amateurs. No frequency belongs to any one person or group (the WIA included).

The details of the agreed Band Plans, both International and local, are published on page 24 of the current Call Book.—VK3UV. ■

QSP

YRCS

It seems much too long since this abbreviation hit AR but rest assured it is alive. "Zero Beat" is the national quarterly of the Youth Radio Scheme and is edited by Ken Hargreaves VK2AKH. Where to obtain details of YRCS clubs, how to start one and other details? The March 1980 issue of Zero Beat lists addresses of three States, nothing is known about the others. For VK2 write to VK2AKH (QTHR), for Victoria Roy Hartkopf VK3AOH, and for VK5 and VK8 the Secretary is Maxine McEvoy, 5 Tyne Avenue, Kilburn 5042. Study material for novices, AOCP candidates and morse code C60 cassettes are obtainable from the WIA NSW Education Service, Box 109, Toongabbie 2046. ■

AROUND THE TRADE

NEW DAIWA ANTENNA COUPLER

Daiwa Company of Japan has released a new range of antenna rotators which incorporate a map of the world — centred on Australia.

Two new control boxes are available for both the heavy and medium duty rotators. With the "pre-set" type of controller the antenna direction is set by turning the knob to the correct bearing for the country concerned. The rotator then turns to the desired heading.

The other type of controller uses the traditional methcd of pressing a button until the direction pointer stops a tthe correct bearing.

The Daiwa range of rotators are distributed in Austral'a and the Pacific by Vicom and are available at most amateur radio dealers. ■

ICOM SOON TO RELEASE NEW WARC HF RIG

Following the success of the IC701, ICOM will soon release an additional HF transceiver to be known as the IC720.

The IC720 will incorporate all the new WARC frequencies together with a general coverage receiver up to 30 MHz.

A microprocessor is used in the IC702 which enables simple interface to another microprocessor or a range of new options to be introduced by ICOM.

For further information on the new IC720 contact Vicom Internationtl on (03) 699 6700 or (02) 436 2766. ■

TONO DOT MATRIX PRINTER

The Tono Corporation has released the HC800 matrix printer, incorporating the latest microprocessor technology. The unit has been specifically designed for connection to the Tono series of communications computers but can also be connected to any microprocessor having standard interface.

The HC800 features ● Adjustable forms width — from 155 to 240 mm ● Programmable character width — normal, double or narrow width (80, 40 or 132 columns/line) ● Internal buffer holds full line of characters ● Software programmable vertical format unit (VFU) providing full control of vertical formatting by the computer via control codes (when using with microprocessor) ● Manual control panel allowing convenient override of main control functions. Also status indicators ● Paper feed from either underneath or at rear ● Takes readily available paper and ribbons.

Specifications include: ● Bidirectional matrix-type impact printer taking standard fan-fold sprocketted paper between 115 and 240 mm wide ● Print speed 125 characters per second ● Throughput speed 64 lines per minute (form feed speed 10 lines per second) ● Full upper and lower case ASC11 character set (96 characters) ● Character format 9 x 7 dot matrix ● Character spacing 10, 5 or 16.5 characters per inch (80, 40 or 132 columns) — software selectable ● has inbuilt 80 byte character buffer, self-test string generation facility, software programmable vertical format unit ● Interface: 7-bit parallel, Centronics type. Signal levels TTL compatible ● Power consumption 7W on standby, 80W when printing (at 240V AC) ● Data input ASC11 (9½ characters).

Retail price is around $970 and the unit should be available from May from Vicom Pty. Limited.

For further information contact the distributors, Vicom International Pty. Ltd. on Sydney (02) 436 2766 or Melbourne (03) 699 6700. ■

MAGPUBS — Overseas Magazine Subscriptions

Will those concerned please note that Magpubs will no longer process subscriptions to overseas magazines (EXCEPT VHF COMMUNICATIONS and BREAK-IN).

- Members wishing to subscribe to QST, Radio Communications, CQ, Ham Radio, etc., or wishing to renew existing subscriptions to these magazines, or wishing to follow up missing issues (etc.), should direct their enquiries to the publishers concerned.
- Magpubs subscriptions to

  VHF Communications — Rates:

  Sea mail $8 20 p a

  Airmail .... $12.40 p.a.

  (Back issues from 1970 are still available.)

  Break-In . $12.00 p.a.

  Magpubs, PO Box 150, Toorak, Vic. 3142.
- Books (ARRL, RSGB, etc.) and other items **are available from your Division** or from Magpubs, PO Box 150, Toorak, Vic. 3142.

The Advertisers in "Amateur Radio" support the WIA member — give them first preference — and tell them so, too!

SILENT KEYS

It is with deep regret that we record the passing of —

Mr. F. E. GRIFFITH	VK400
Mr. H. A. PERKINS	VK4AXH
REV. D. E. LAVER	VK4ZDL
KEITH PETERS	VK3AKP

OBITUARY

H. J. (JOHN) AMOS VK2ANK

John had spent much of his life as a radio operator with different airlines, including Trans Oceanic Airways and later QANTAS. John was the radio operator on the first Sydney to Hobart yacht race. In recent years John retired from the aircraft industry to run a dog kennel located west of Liverpool.

To his wife and sons, the Amateur Radio service would like to extend its sympathy. ■

HARRY PERKINS VK4AXH

Harry passed away late December 1979 and will be sadly missed by his fellow amateurs.

Harry was first licensed in the early fifties as VK4XH in Townsville. He then moved to NSW and operated under a VK2 call. Recently Harry became very interested in amateur radio through his son Alan VK4NJA, a very active Novice operator. Harry will be remembered for his cheery operating techniques and also helpful attitude. He was a pioneer in general aviation avionics and spent 25 years in the industry. Our deepest sympathies to his wife and children.

Barrie Smeaton VK4ALK. ■

KEITH PETERS VK3AKP

We were all saddened to hear of the death of Keith Peters VK3AKP, which occurred in Stawell recently. Keith gave five years service in the RAAF as a wireless operator, air crew, then wireless operator mechanic. He rendered service in Australia and the Islands.

After the war he joined the amateur ranks and also conducted a Radio and TV Service of his own, which he carried on until his untimely death.

He took an active part in all WIA activities and instructor in amateur radio classes, so his help was greatly appreciated by all members of the Western Zone.

Keith was active on all bands but was extra keen on DX, having nightly skeds with friends in the UK.

His gear was something to be admired by all those privileged to see it; a lot was home-brew with a very professional touch. His antenna system was the last word in perfection, the main antenna 110 ft. with rotating beams, the smaller one for higher frequencies, also with fingertip control.
To his wife Dorothy and family we all convey our kindest thoughts.

Bill VK3AKW. ■

EDWARD CHARLES HOWARD VK2XX

My grandfather was born in 1906 at Paddington and at about five years old moved to the Sutherland Shire, where he spent the rest of his life. He left school in 1919 and his first job was with the Sutherland-Cronulla Steam Tramway. He worked as an assistant fitter, then conductor until 1929 when he obtained his driver's certificate.

This was the last certificate to be issued to a driver of the steam trams due to the electrification of lines. He worked the Cronulla-Sutherland passenger service till 1931. He then transferred to the Kokarah-Sans Souci steam trams until the closure of that line in 1937. He then drove trolley buses and diesel buses till his retirement owing to ill-health in 1967.

My grandfather took an interest in radio from its infancy and obtained his amateur radio licence in May 1948. Since then he has been an active member on most bands, and over the years, through his illness, he would always have a cheerful QSO for everyone. I have applied to have my grandfather's call sign allocated to me, and will endeavour to maintain his high standard.

Ian Howard VK2DCX. ■

TED KENNY VK2EK

After a long illness, Ted Kenny VK2EK passed away on the 9th April at his home, 13 Stapleton Street, Wentworthville. Ted was 77 years old and had been involved with amateur radio since 1923, when he held the unofficial call of 2EK, later to be changed to AOEK, and finally when the licences were issued in 1927 to VK2EK, the call held ever since. His licence number was 373. He had been active ever since, except during the war years when he served in the army. Returning to civil life he again carried on with his amateur radio until a few days before his passing. He was a very active CW man, and could be heard almost every evening talking to his G friends on CW.

Ted was involved in building some of the early radios in Sydney and until a few years ago was employed in the radio industry. Some of his old sets are now in museums as an indication of the radio industry in Australia in the early days.

Ted will be missed on the bands, and locally he will never be replaced as a friendly person to visit when passing through Wentworthville. Ted leaves a wife, Joyce, to whom our heartfelt sympathy is directed. We know that you will miss your lifelong companion.

Syd Molen VK2SG. ■

ALAN H. REID VK3AHR

Alan's first appearance on the air was as 3HR in the 1920s while he was still a school boy. After leaving school, as a budding electrical engineer of a decidedly practical turn of mind, he revelled in the setting up of slop-jar and other power supplies which brought quite often a blush to the plates of various self-excited oscillator tubes, as "wavelengths" fell progressively below 200 metres. He did his share of brass-pounding to open up the wonderful DX of the "30 metre" band before closing down and setting off to obtain experience in his chosen profession in UK.

Alan returned to Australia in 1938, joining a group involved in research and development in the communications field at AWA, where he found numerous friends from his time on the air. With true "ham" instinct for enciting new technical fields, war-time found him involved in the important work of producing radar stations for the fighting forces.

At the end of the war, Alan came back on the air as VK3AHR, his well known fist being heard via a variety of ex-wartime rigs. Very soon, however, he began to sense the exciting possibilities of that strange new technique derisively known as "duck talk". He successfully built a number of phasing and other rigs and became well known in many parts of the world as one of the successful VK SSB stations of the 1950s. Quite soon he acquired the well deserved luxury of a KWM2, but continued his active "build your own" interest in linears and beams.

Alan preferred to devote his time on the air to in-depth discussions with the many kindred spirits with whom he made close friends over the years. In this he was fortunate to have the support and understanding of his wife Gladys and their children David and Leslie. As did we all, they appreciated how Alan had made far more of amateur radio than just a technical hobby and used it to spread the warmth of his friendship and encouragement and help over the wide circle of friends on whose behalf it is my sad task to set down these words of tribute.

Dave VK2IJ. ■

ADVERTISERS' INDEX

AUDIO TELEX	43
AMATEUR RADIO ACTION	38
BAIL ELECTRONICS	27
CW ELECTRONICS	28
DICK SMITH ELECTRONICS	15
SCALAR INDUSTRIES	9
SIDEBAND ELECTRONIC ENGINEERING	48
VICOM INTERNATIONAL	2, 4, 6, 8, 10
WILLIAM WILLIS & CO.	41

HELP WITH INTRUDER WATCHING

"WILLIS" AIR-WOUND INDUCTANCES

Take the hard work out of Coil Winding, use — "WILLIS" AIR-WOUND INDUCTANCES

No.	Dia. Inch	Turns per Inch	L'gth Inch	B & W Equiv.	Price
1.08	½	8	3	No. 3002	$1.20
1.16	½	16	3	No. 3003	$1.20
2.08	⅝	8	3	No. 3006	$1.45
2.16	⅝	16	3	No. 3007	$1.45
3.08	¾	8	3	No. 3010	$1.70
3.16	¾	16	3	No. 3011	$1.70
4.08	1	8	3	No. 3014	$1.90
4.16	1	16	3	No. 3015	$1.90
5.08	1¼	8	4	No. 3018	$2.10
5.16	1¼	16	4	No. 3019	$2.10
8.10	2	10	4	No. 3907	$3.10

Special Antenna All-Band Tuner Inductance
(equivalent to B. & W. No. 3907, 7 inch)

7" length, 2" dia., 10 TPI **Price $5.25**
Reference: A.R.R.L. Handbook, 1961

Willis Pi-Coupler Unit — $28.50

Stockists of Transmission Cables, Insulators and Hard Drawn Copper Antenna Wire

Write for range of Transmission Cables

WILLIAM WILLIS & CO.
PTY. LTD
Manufacturers and Importers
77 CANTERBURY RD., CANTERBURY
VIC. 3126 Phone 836-0707

HAMADS

- Eight lines free to all WIA members. $9 per 3 cm for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA 1979 Call Book.

FOR SALE

ICOM IC-211, mint cond., with outboard scanner. John VK2BTQ. Enquiries VK2ABA. Ph. (02) 50 4681.

Info-Tech M300 Trimode Keyboard, RTTY features, 4 speeds, 2 shifts, AFSK or FSK, CWID, RY, BROWN FOX; also model 200E Trimode converter, both as new, half price. VK7HV, QTHR. Ph. (002) 28 4622.

Yaesu F2101D Rx, 160-2m, complete with filters, manual, etc., in exc. cond., $700; also Kenwood antenna tuner, AT200, $150. L30853, QTHR. Ph. (053) 31 1138.

Kenwood TS820 Txcvr, CW filter, mint cond., little use, with original packing, owner and service manuals, $730. VK4UR, QTHR. Ph. (07) 266 7873.

Transformer, 240V to 1800-0-1800V at one amp., $25, ONO; auto transformer, 240V to 110V, 1.3 kVA, $20, ONO; 2 filter chokes, approx. 0.5 amp rating, $5 ea., ONO. VK2BDL, QTHR. Ph. (069) 62 1206.

HRO 500 Rx, continuous coverage from 5 kHz to 30 MHz, good cond.; also Yaesu FTV 650, 6m, transverter, unused, $150; Kenwood DG-1 digital display for TS-820, unused, $120. Ph. (02) 98 6249.

KW Power and SWR Meter, 0-100W and 0-1000W, covers 160m to 10m, exc. cond., $35; electronic keyer, Katsumi EK-105A(does not include a monitor but has provision to key an external monitor if required), 5-50 w.p.m., 240V AC, exc. cond., $40. B. Bathols VK3UV, QTHR. Ph. (03) 90 6424 AH.

Eddystone EC10 Receiver, 550 KC to 30 MC, $80. VK2AAB. Ph. (02) 487 1428.

TR7200G 2m Tcvr, ch. 40, 42, 44, 46, 48, 50, ext. VFO, VR30G, 5/8 GP, the lot $270. VK4CJ, QTHR. Ph. (07) 343 2235.

Two Metre 9 Element Commercial Yagi, $15; 2m 40W (6 up) amplifier, $15; MR3 carphone, Rx section needs livening up, $15. VK3TG, QTHR. Ph. (058) 52 1636.

100 ft. Free Standing KVC Southern Cross Tower, easily dismantled into 10 ft. sections for transportation, exc. cond., no rust. For further information write to I. Buchanan VK2VPK, 11 Shore Street, Moruya, 2537 NSW.

Shack Clearance: Kenwood TS120S, PS 30 power supply, 20 amp, MB100 mobile locking bracket, MC30 mike, $775, ONO; Barlow-Wadley XCR30 receiver, AC-DC portable, full coverage, $195; Trio TR7200G, 2m, FM, $135; linear amp, QM70, $50; HC500A antenna coupler, $80. Ph. (03) 435 4336.

Power Supply, 240V input, 300 and 400V DC at 300 mA, 12V DC at 2A and 6V AC at 4A, $35; 80-11m transverter, complete with 11m exciter, 4 crystals supplied, 10 watts output, $70; Ferris car radio with push-button selector, works well, needs speaker $10. Steve VK4NBY, QTHR. Ph. (07) 52 0171, ext. 282, Bus.

Galaxy 5 Txcvr, complete, $280; 2m FM repeater with 90W linear, $138; Dentron match, $60; 80m transverter with 11m CB modified with wide range clarifier, $128. VK2ZUZ, QTHR. Ph. (067) 65 5539 AH.

Kenwood TS120S, PS 30 supply, MB 100 mobile bracket, plus microphone, genuine reason for sale, $800; consider trade-in 520 or FT200. Ph. (03) 341 5913 Bus.

Uniden 2020 HF Tcvr with manual, $535; Yaesu FTV-650B 6m transverter, $180; Multi-quartz-16 2m FM txcvr with rptrs 1 to 8 and simplex 40 and 50, complete, $185. Peter VK2BJF, QTHR. Ph. (042) 96 2891.

AR7 Receiver, complete with all coil boxes (not working), 035. VK2LK, QTHR. Ph. (02) 635 6874.

Yaesu FT901DM SSB Txcvr with CW and AM filters factory installed, FV901DM external scanning memory VFO, SP901DM speaker/phone patch, Yaesu microphone, all equipment brand new in unopened boxes, never unpacked, surplus to my requirements, $1750 the lot. James VK2JO. Ph. (02) 799 5566 or (02) 36 7756. GPO Box 5076, Sydney 2001, NSW.

Kenwood TS700A 2m All-mode Txcvr., new cond., orig. packing, $500; Kenwood VOX-3 unit, suit TS700A, TS600, etc., new in orig. packing, $15. VK5YX, QTHR. Ph. (08) 74 2350.

Yaesu FT101, AC-DC, mic., etc., excellent cond., $450; Heathkit SB101 80-10 transceiver, as new, $350; Icom DV-21 digital VFO, suit IC22/22A, $150; Icom IC-RM2 remote control for IC701/211, $125. VK3OM, QTHR. Ph. (03) 560 9215.

1675 Tx with xtals for Ch. 2 and 40; Swan 240 (copy), built by late 2JZ, complete with manual, will accept best offer, reason for selling only lack of time to use. VK5XR, QTHR.

Geloso Rx and Tnx in mint cond., can be heard on the air by arrangement with VK4LN any time, Rx G209 covers SSB, USB and LSB, Tnx AM, all bands except 160, beautiful museum pieces, matched cabinets, $100 each; Galaxy Mk. III transceiver, with CW filter, ext. VFO, spare valves, P/S, can be heard any time on sked at 8 a.m. on 7.12 mcs, 400W PEP, $350, ONO. VK4LN, QTHR. Ph. (071) 82 2675.

National Solid State RJX 601 6m Portable, VFO, AM/FM, $160; Icom 1C22A 2m FM txcvr., with crystals, $150; Realistic AX190 coms Rx in orig. carton, $190. VK3ZPV. Ph. (03) 561 5119.

Complete Station: Yaesu FT101E in good cond., with carton, manual and CW filter, $600; Kenwood TR7600 2m txcvr, complete, $350; RM76 microprocessor for TR7600/7625 transceiver, $90; SX100 scanning receiver, $300; Fichard Cowles. Ph. (02) 699 9403.

Model 15 Teleprinter with "Electronics Australia" demodulator and good power supply, also many rolls of paper, the lot in e.c., for only $100; reason for sale is that I can't get this lot to copy off-air at my QTH. Terry Robinson L31105, QTHR.

Yaesu FT200 Txcvr with power supply, as new cond , in orig. packing, $350. Ph. (03) 528 6598 AH.

Icom IC701 160-10m Txcvr, good cond., slight scratch on case, no PSU, urgent sale, $850; Icom 22S 2m FM txcvr, as new, 6 mths. old, $250; **Tokyo Hy-Power Labs 2m Antenna Tuner,** PWR and SWR meter, 0-5W, 0-20W, 0-150W, SWR to 450 MHz, good cond., $60. Trevor Pitman VK3NMJ/YTP. Ph. (03) 789 3129 after 6 pm., (03) 797 4230 Bus.

Atlas 210X, limited edition, DD6C digital display, 10XB xtal oscillator, Shure mobile and desk mics, MFJ antenna tuner, complete mobile or home station, mint cond., $875; Icom IC-245 SSB/FM synthesised port./mobile, all accessories, $485; Icom IC215 2m portable, 10 channels supplied, mobile bracket, nicads, $175; Commercial 2m FM/SSB amplifier, 130W from 2/10/25W input, $200. Alan Nutley VK2BNA. Ph. (02) 230 5122 Bus., (02) 80 2516 AH.

IC701 HF Transceiver, $1050; Hygain 204BA 20m beam, $140; Ashai 80-10m mobile whips, complete with base and coax, $100; SX100 VHF/UHF scanning Rx, $350; Realistic patrolman 50 Rx, $40; B47 army rig, 38-56 MHz, $10; B47 army rig, not working, $5; Vinten 6m FM, 52-525, $5; old tape recorder, $25. Lionel VK3NM, QTHR. Ph. (03) 88 3710 AH, (03) 568 2733 Bus.

Steel Radio Tower, 45 ft. free standing, fully dismantled and ready to take away, $65; heavy duty rotator, suit large beam, $75. Peter Nesbit VK3APN. Ph. (03) 523 6932.

FT75B, good cond., AC, DC, DC converter and VFO, $375. VK3NXI. Ph. (059) 62 5236.

R-390A/URR, 0.5-32 MHz Rx, with all filters, $480; Yaesu FT221 2m SSB/FM txcvr., $475; both with service manuals. VK1VP, QTHR. Ph. (062) 48 5882.

Yaesu FT-101 Tcvr, exc. cond., no mods., with mic., key, cables, manual, SWR bridge, original carton, $450; University R/C bridge with spare 6U5 indicator, $12; Siemens Lab. type Wheatstone bridge with centre-zero meter, $15; Philips micro casette recorder and extra tapes, $20. Mervyn VK4SO, QTHR.

Trio Rx, type 9R-59DS, with manual, $79. VK2ABI, QTHR.

Hinged Metal Base Plate with tabernacle for use anchoring a tilt-over mast, $25. Buyer to collect from St. Ives, Sydney. VK2AXR, QTHR. Ph. (02) 44 1389.

Yaesu FTDX401 with spare valves, incl. new finals, also mic., manuals, etc., $450, ONO. Graham Basden VK6GG, QTHR. Ph. (09) 405 2897.

New Butternut Vert. Ant. HF5V-S, 80to 10m, suit low-profile restricted height/space areas, e.g. roof of high-rise building or caravan park, traps used for 15 and 15m operation, entire radiator 16 ft. length active on all other bands, $140, ONO. VK2NI, QTHR. Ph. (02) 872 1470.

Yaesu FT200 with FP200 PSU, black front panel, mint cond., some mods., handbook, mic., cooling fan and spare finals (6JS6C), $400, ONO. Cmd. R. M. Lidden VK1ZRQ/NCS, RAN, College Mess, HMAS Creswell, Jervis Bay 2540. Ph. (044) 42 1001, ext. 270 after 2000h.

ICOM IC211 2m Base Mobile Transcever, mont cond., $650; ICOM ICSM2 base mike, new $45; Kenwood AT200 antenna tuning unit, as new, $145. No offers. VK2BYS, QTHR. Ph. (069) 47 1998.

Yaesu FT101E, latest model, unmodified, mint cond., almost nil use, $590, ONO. Rod Taylor. Ph. (07) 277 3833 Bus.

Yaesu FT620B with 50-54 MHz xtals, plus xtal for 49.5-50 MHz, AM filter and calib., $450; Yaesu FT221 all mode 2m with 2 x U310 preamp, $550; Palomar HF (10-30 MHz), $180; FL110 HF linear, $190 (both 100W plus o/p). VK3AQR, QTHR. Ph. (052) 78 1043 Bus., (052) 78 7558 Bus.

Yaesu FT101E, late model with front panel control of speech processing level AC/DC with cooling fan and accessory 600 Hz filter for CW/RTTY 160-10m Tx plus 10 MHz and 27 MHz Rx only. Has had little use, exc. cond., overseas travel and study costs compel sale. $675 or reasonable offer. Alan Beagley VK4AFE, QTHR. Ph. (07) 371 4399 AH.

WANTED

Wanted to Buy: Handbooks, circuits or copies of World War II Navy, Army or Air Force transceivers. VK5NTY, 57 10th Avenue, Joslin, SA 5070.

Valves, 9001, 9002, 6C4WA and 5670; AN/ARC-51BX (ORX) UHF transceivers and handbook or parts thereof. VK3BFB, QTHR. Ph. (03) 93 1638.

Colour TV Pattern Generator, CRT tester, TV service manuals and circuit boards, etc. Details to VK3YEJ, QTHR. Ph. (050) 23 2467 AH.

RM-3 Remote Control for IC-701. Contact Rob VK3VFP. Ph. (03) 311 9185 AH.

Control Unit Type MCU-178 or similar, to suit CDR ham rotator type TR44. Price, etc., to VK2AS. Ph. (02) 467 1784.

FT200 with AC-DC facilities, or Kenwood 520 with DC converter, reasonable. Ph. (03) 341 5913 Bus.

Collins 30LI Linear Amp., any cond., even if damaged or faulty, also frequency counter to 150 mcs. VK4LN, QTHR. Ph. (071) 82 2675.

Can somebody tell me the name of a good book on "Cobol" programming as I am having trouble with same. Details to J. Kitchen VK6TU, QTHR.

Aircraft Receiver, Bendix mod. RA10DB, and/or manual or circuit. Colin Gracie L30060, PO Cavendish 3408.

TRADE HAMAD

Amidon Cores — refer ARRL Handbook, iron powder and ferrite toroids, ferrite beads and sleeves for wideband RF amps. Large SASE for data/price list. R.J. & U.S. Imports, Box 157, Mortdale, NSW 2223.

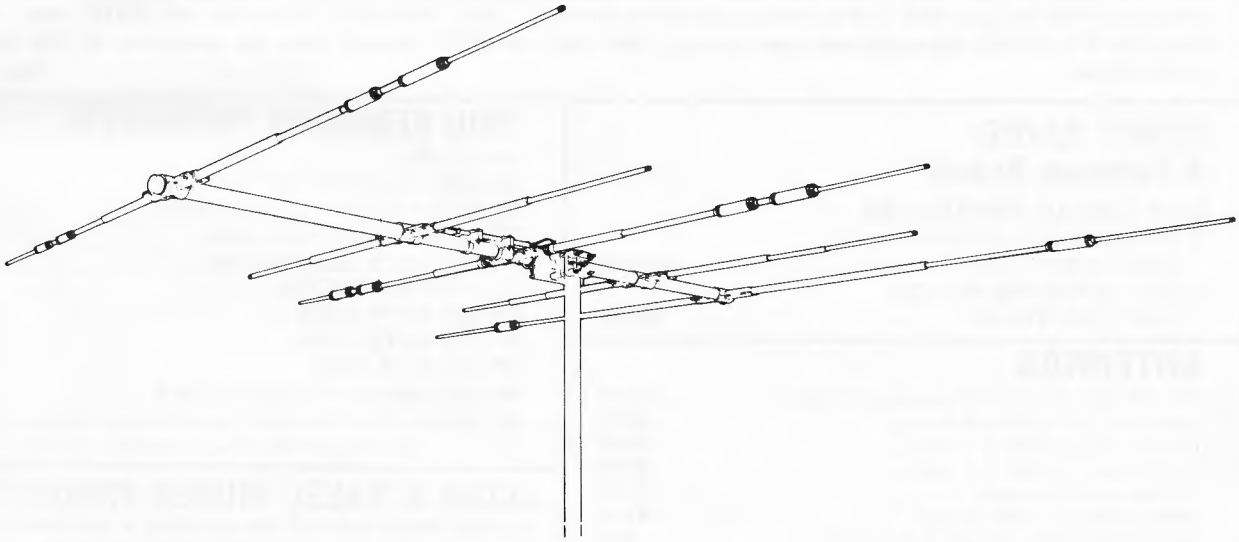
AMATEUR RADIO IS A RESPONSIBLE SERVICE

LET'S KEEP IT THAT WAY

hy-gain®
DIVISION OF TELEX COMMUNICATIONS, INC.

TH5DX

10-15-20 METERS



We are proud to introduce the newest member of our famous Thunderbird line of Tri-Band antennas. The TH5DX offers outstanding performance on 20, 15 and 10 meters. It features 5 elements on an 18 foot boom, with 3 active elements on 15 and 20 meters and 4 active elements on 10 meters. The TH5DX also features separate air-dielectric Hy-Q traps for each band. This allows the TH5DX to be set for the maximum F/B ratio and the minimum beam width possible for a Tri-Band antenna of this size. Also standard on this antenna are Hy-Gain's unique Beta-match, rugged Boom-to-mast bracket, taper-swaged elements and improved element compression clamps.

Boom length	18 feet
Longest Element	31 feet
Turning Radius	18 feet
Surface Area	6.4 sq. feet
Wind load	164 lbs
Weight	50 lbs
VSWR at resonance	less than 1.5:1
Power Input	Maximum Legal
Input Impedance	50 ohms
−3dB Beamwidth	66° average
Lightning Protection	DC ground
Forward Gain	8.5dB
Front-to-Back Ratio	25 dB

WRITE OR CALL FOR A FREE BROCHURE AND THE NAME OF YOUR NEAREST HYGAIN DEALER
SOLE AUSTRALIAN DISTRIBUTOR

AUDIO TELEX COMMUNICATIONS
PTY. LTD.

hy-gain® electronics
DIVISION OF TELEX COMMUNICATIONS, INC.

MELBOURNE:
7 Essex Road,
MOUNT WAVERLY 3149
Tel: 277 5311

BRISBANE:
394 Montague Road
WEST END 4101
Tel: 44 6328

SYDNEY:
1 Little Street,
PARRAMATTA 2150.
Telephone 633 4344

SIDEBAND ELECTRONICS ENGINEERING

P.O. BOX 23, SPRINGWOOD. N.S.W. 2777
WAREHOUSE 213 HAWKESBURY RD. SPRINGWOOD
TELEPHONE (047) 54 1392

AN APOLOGY

We apologise for our inability over the past month or so to satisfy the demand for our ever-popular KEN KR-400 medium duty and HAM-3 heavy duty rotators. All being well, at the time of publication we should have ample stocks of the KR-400 (at $120 complete with upper and lower mast brackets, control unit etc. it just has to be the best rotator deal available) and KR-500 vertical rotator. Fresh stocks of CDR HAM-IV and T2X Tail twisters should be here by July. HB-35C Antennas at $375 and YAESU MUSEN FT-101ZD Transceivers with cooling fan etc. at $895 should also be available at the time of publication.

— Roy Lopez

HENRY RADIO
A Famous Brand

NEW LINEAR AMPLIFIERS

2-KD5-2KW PEP 80-10M SSB/CW/RTTY/AM **$1050**
1-KD5 1200W PEP 80-10M SSB/CW/RTTY/AM **$850**

ANTENNAS

TET HB-35C 10-15-20M log/yagi HY-GAIN **$375**
TH6-DXX 10-15-20M 6 el yagi **$385**
TH3-JR 10-15-20M 3 el yagi **$235**
DB10-15A 10-15M 3 el yagi **$190**
153-BA 15M 3 el yagi **$120**
18AVT/WBa 10-80M vertical **$110**
GPG-2 2M 5/8W collinear 3-4db gain **$25**
HELICAL mobile whips w/adj. tip
80M 40M ..... each **$28**
20M 15M ..... each **$26**
10M **$25**
GPV-5 2M collinear 2 x 5/8W **$48**
OSCAR 2D 2M mobile ¼ or 5/8W **$27**
BN-86 balun for beam buyers **$20**
HI-Q baluns 50 ohm 1 KW 1:1 ..... **$15**

ROTATORS AND CABLES

All rotators now come with bottom brackets and control indicator boxes wired for 28V AC —

CDE BT1A BIG TALK light duty programmable 4-pos. push button plus normal operation **$85**
KEN KR-400 medium duty **$120**
KEN KR-500 vertical rotator **$150**
CDE Ham 1V heavy duty (June/July) ..... **POA**
CDE T2X Tail twister extra HD **$250**
RG-8U foam co-ax. per meter now **$1.20**
8-cond. rotator cable. per meter **80c**

ACCESSORIES

ASAHI chrome bumper mount **$8**
Standard bumper mount **$5**
Chrome base and spring to suit ASAHI mount **$20**
FERGUSON 240V AC transformer 2 x 9V secondaries at 3A **$10**

TRIO KENWOOD PRODUCTS

TS-520 SE ..... **POA**
TS-180S 10-160M 12V solid state ..... **POA**
TS-120S 10-80M 12V solid state ..... **POA**
TS-700SP 2M all mode trans. ..... **SPOA**
R-1000 digital clock receiver ..... **POA**
VFO-520 for TS-520S **$130**
SP-520 for TS 520S **$30**
SP-120 for TS 120S **$32**
SP-100 for R-1000 ..... **$32**
DK-520 Adaptor TS-520 to DG-5 ..... **$10**

All further Trio-Kenwood accessories transceivers and test equipment at competitive prices.

ICOM & YAESU-MUSEN PRODUCTS

In the future we will be carrying a greater range of Yaesu-Musen products and a range of Icom products.

YAESU-MUSEN
FT-101ZD 160-10M trans.c/w cooling fan & AM **$895**
FRG-7.5 -30Mhz receiver **$310**

KYOKUTO FM 2025A

The very latest 2M FM from KYOKUTO 2M FM mobile 25W 10 memory channels plus full scanning etc. **$350**

CO-AX CONNECTORS

PL-259, SO-239, cable joiners ea. ..... **.60c**
T connectors **$1.50**
GLP right angle, RG-58U to SO-239 w/lock nut & weatherproof cap **$1.50**
Double female connectors **75c**
MLS right angle RG-58U to PL-259 ..... **75c**
In-line mic. sockets 3 & 4 pin ea. **60c**
Mic. sockets 3 & 4 pin each **60c**
M-ring body mount w/lock nut **$1.50**

NOVICE SPECIALS — CONVERSION CRYSTALS

Set of 8-crystals. Converts 28.480 to 28.595 MHz in 5-kHz steps. Clarifier tuning on Tx and Rx plus info to re-activate 24th channel ..... per set **$32**

Set of 4 x crystals converts 28.310 — 28.600 10 x 20 kHz steps MHz as above **$15**

All prices are NET, ex Springwood NSW, on pre-payment with order basis. All risk insurance is free of charge, allow for freight charges by air, road, rail or postal, excess will be refunded. Prices are subject to change without prior notice. All orders cleared on a 24-hour basis after receipt of order with payment.

ROY LOPEZ (VK2-BRL) Manager